SOUTHERN RHODESIA.

REPORT

on the

PUBLIC HEALTH

For the Year 1947

Presented to the Legislative Assembly
1948

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Report on the Public Health for the Year 1947

INTRODUCTION.

Public Health Department,
P.O. Box 587, Salisbury,
18th March, 1948.

The Minister of Internal Affairs,

Sir,

I have the honour to submit the Annual Report of the Public Health Department for the year 1947.

I have the honour to be, Sir, your obedient servant,

R. M. MORRIS, M.D., D.P.H.,
Medical Director and Chief Health Officer.

In spite of difficulties in the provision of buildings and in supplies of equipment, the year under review has been one of steady progress, though it may be a matter of some regret that this progress has been more evident on the curative than on the preventive aspect of the Department's activities.

During the year negotiations were opened by the Government with the Branches of the British Medical Association on the fundamental principles of a National Health Scheme. It is unfortunate that as yet no agreement has been reached.

In October the newly constituted Nutrition Council held its first meeting, and since then has done a great deal of work in estimating basic requirements of essential foodstuffs and in investigating the means of providing these from within the Colony. The Council is maintaining close liaison with all other bodies interested both on the production and consumer sides, and thus it is hoped that the important and difficult problem of good feeding of the population will be solved.

A further step in the co-operation between local authority and the central Government was reached in November when a new Public Health Finance agreement with the Municipality of Bulawayo was approved. This agreement will regulate the conditions under which financial assistance can be given from Parliamentary Votes for public health purposes, including salaries, buildings, equipment and maintenance costs in connection with maternity and child welfare, venereal diseases, clinics, infectious diseases and other aspects of the preventive work undertaken by the Bulawayo City Council.

The difficulty in providing new buildings is the cause of serious perturbation since the leeway in the programme, inevitable after the war years, has not yet been made up and the previously unforeseen demands due to the rapid increase in European population cannot be supplied. The problem is the more accentuated because the expected expansion in some centres is likely to be of a magnitude which renders the existing buildings and even their sites of no value as a starting point for the new requirements. Hence new sites and entirely new schemes must be selected.

The possibility of these schemes materialising *pari passu* with the general development of the areas in question remains problematical and at the close of the year in spite of all efforts the building programme was very far behind urgent needs. In spite of this it was possible to open the Marandellas European Hospital in November and to make such progress with the Chipinga Hospital that it should be available in the latter half of 1948.

The work of rebuilding the Ingutsheni Mental Hospital in Bulawayo is progressing steadily, and some advance is now evident in the schemes for the new Native Hospitals in Salisbury and Bulawayo.

Another large scheme of reorganisation has also been commenced at Ngomahuru Leprosy Hospital in conformity with the recommendations of the Ngomahuru Hospital Inquiry Commission Report.

Satisfactory progress on new Native Clinics can also be reported. The state of the fabric of some of the older clinics, however, is such that it will probably be expedient, especially in view of the present supply position, to curtail work on any further new clinics for several months, so that all available resources may be concentrated on bringing existing buildings up to a reasonable standard. Particularly is this necessary where the Clinic is at the home station of a medical officer, who is available every day and where therefore concentration of the more serious cases is the general policy.

The new scheme for financial assistance to Missions for their medical work was gazetted in February. This provides a greatly enhanced scale of grants as well as provision for assistance in capital expenditure. In return the Mission has to comply with enhanced standards of efficiency and of trained supervision of their medical work as well as undertaking to treat all natives regardless of their abiltiy to pay. The scheme is proving very popular. Many Missions have already availed themselves of the opportunity to improve and expand their medical facilities, and it is known that even more are examining the possibilities on similar lines.

This position it is felt is one for satisfaction since it promotes co-operation between Missionary Societies and Government, assures an adequate standard of medical work in the Missions, and provides wider opportunities, at minimum cost, not only for the care of patients but for the organised training of nursing orderlies and maternity assistants.

Another aspect of the Department's work which has received a great deal of attention has been on the prevention and treatment of the many diseases commonly occurring in the Colony. These problems have been approached in a two-fold manner, through local agencies and through the Central African Council's Research Committee.

The local agencies have been largely concerned with Bilharziasis and with Malaria.

The Bilharzia Research Unit, although hampered by a temporary lack of personnel, has continued to take a leading place in the original work on this disease, which work has been supplemented by personal observation and original research by officers of the Government's Medical Service.

In addition to this local original work the facilities of Government have been used to investigate new knowledge available elsewhere. An example of this is the collaboration with the Medical Research Council of the United Kingdom in carrying out trials of a new oral treatment of Bilharziasis. Whilst in this instances success in the actual treatment was not attained, the experiment demonstrated to the full the ease with which visiting experts can be provided with amenities for specialised work and this augurs well for the future.

The Malaria unit devised and carried out a wide scale experiment on D.D.T. spraying, but the effects of the drought on mosquito breeding during the season militated against obtaining really useful or reliable figures. For the same reason the results of large scale clinical trials of Paludrine as a prophylactic were rendered difficult to assess with any precision.

Throughout the year trials were conducted into the relative efficiency and cost of various methods of using Penicillin in early syphilis in natives. These have led to promising results, but the supply position of the antibiotic renders it premature to adopt the treatment as standard procedure.

Active investigation is proceeding at Ngomahuru with reference to the efficacy of the newer treatments for Leprosy. Whilst the results with Diasone have seemed to be an improvement on the former treatments, the attendant risks suggest that it may be wiser to change over to Sulphetrone and this will be done in 1948.

In addition to the above items undertaken by the Department within its own resources, supplemented by those of local authorities, every effort has been made to speed up the formation of a medical research side of the Central African Council. One of the many reasons for this is that medical officers with heavy commitments in routine duties have great difficulty in keeping up experiments on a large enough scale and for a sufficiently long period for the results to be dealt with statistically. If the Medical Sub-committee of the Central African Council's Research Section is able to formulate precisely the scope of individual problems or even of defined aspects of these, it is hoped that experts will accept invitations to come to the territories on contract for a more or less fixed term to issue reports and give guidance on future action.

Within the Department there has been a general easing of the staff position, especially among the professional and technical officers. The Colony is enjoying a great wave of popularity, and many doctors, nurses and other professional

officers are applying for appointments. Whilst not all of these are of the required standard, those appointed have worked loyally and well.

One serious limitation on the expansion of staff and the improvement of their working conditions has been the lack of accommodation and housing.

The figures of the vital statistics which follow show a satisfactory state of affairs in all sections. The annual birth rate per 1,000 at 29.5 is a record, and is nearly double that obtaining in England and Wales in the years immediately preceding the War.

CHAPTER I.—VITAL STATISTICS.

The Department of Statistics carried out a census of the African population in one district using a method which greatly reduces the errors usually associated with this type of census.

This is a most important advance and raises hopes that soon reasonably accurate information about the African population will be available; information which is vital to sound economic and public health planning. The pilot census showed that in the area chosen, the birth rate was between 46 and 50 per 1,000, and the infant mortality rate about 120 per 1,000 live births.

(1) *Population of Southern Rhodesia.*

The population is estimated at the 30th June, each year.

	1947.	1942.	1938.
Europeans	89,500	78,810	58,870
Asiatics	3,090	2,700	5,670
Coloured Persons	4,750	4,050	
Natives	1,773,000	1,452,000	1,311,000
Total	1,870,340	1,537,560	1,373,540

The first three classes are subjected to regular census examination.

(2) *Summarised Vital Statistics.*

The vital statistical information regarding the European population is given below and compared with the figures for 1942 and 1938.

	1947.	1942.	1938.
Estimated European population	89,500	78,810	58,870
Rate of natural increase per 1,000	21.5	14.5	15.6
Gross number of immigrants	13,595	469	3,509
Number of European births	2,637	1,873	1,469
Illegitimate births included above	40	25	23
Annual birth rate per 1,000	29.5	23.8	25.0
Number of European deaths	718	728	548
Crude death rate per 1,000	8.0	9.2	9.3
Number of infant deaths	101	75	57
Infant mortality rate per 1,000 live births	38	40	39
Number of still births (not included in either births or deaths)	48	29	31
Number of maternal deaths	4	2	3
Maternal mortality rate per 1,000 live births	1.5	1.1	2.0

(3) *European Birth Rates.*

Southern Rhodesia	29.5	23.8	25.0
England and Wales	20.5	15.8	15.1
Union of South Africa	27.1	25.2	25.1

(4) *European Infant Deaths.*

(I) Causes of death, 1938-47.

Disease.	No. of Deaths.	Percentage of Total.
Premature birth and diseases of early infancy	408	54.62
Bronchitis and pneumonia	65	8.70
Diarrhoea and enteritis	94	12.59
Malaria	50	6.69
Measles, whooping cough, diphtheria, dysentery	28	13.75
Various, not classified above	102	13.65
	747	100.00

(II) Deaths during the different months of infancy, 1938-47.

	No. of Deaths.	Percentage of Total.
First month	409	54.75
2 months to 6 months	205	27.44
6 months to 12 months	133	17.81
	747	100.00

(III) Infant Mortality Rates. Rate per 1,000 live births.

	1947	1942	1938
Southern Rhodesia	38	40	39
England and Wales	41	51	53
Union of South Africa	35	48	52

(IV) Causes of Infant Death, 1947.

International List No.	Cause of Death.	No. of Deaths.
9	Whooping cough	2
28	Malaria	5
33	Influenza	2
63	Diseases of the thyroid and parathyroid glands	1
66	Other general diseases	1
74	Leukaemias and aleukaemias	1
80	Encephalitis (non-epidemic)	1
84	Mental disorders and deficiency (a) Mental deficiency	1
107	Broncho pneumonia	3
108	Lobar pneumonia	1
109	Pneumonia (unspecified)	3
111	Congestion, oedema, haemorrhagic infarction and thrombosis of lung	1
119	Enteritis and diarrhoea	17
123	Other diseases of the intestines	1
157	Congenital malformations	8
158	Congenital debility	3
159	Premature birth	30
160	Injury at birth	6
161	Other disease peculiar to the first year of life	14
		101

(5) *European Deaths.*

(i) European Death Rates per 1,000.

	1947	1942	1938
Southern Rhodesia	8.0	9.2	9.3
England and Wales	12.0	12.3	11.6
Union of South Africa	8.7	9.3	9.4

The low death rate is in part due to the fact that the influx of immigrants is in the young adult age-groups. The birth rate also points to an incraese in the numbers in child-bearing age groups.

(ii) Causes of European Deaths, 1943-47.

	1947	1946	1945	1944	1943	Total	Percentage of Total Deaths
1.—Cancer	108	86	94	95	91	474	13·40
2.—Violence	70	53	73	108	105	409	11·56
3.—Heart diseases	123	127	137	112	103	602	17·01
4.—Pneumonia and bronchitis	26	41	38	41	24	170	4·80
5.—Malaria and blackwater fever	25	34	33	44	63	199	5·62
5.—Nervous diseases	70	75	51	52	44	292	8·25
7.—Premature birth and diseases of early infancy	62	38	38	48	46	232	6·56
8.—Tuberculosis (all forms)	8	11	12	19	13	63	1·78
9.—Influenza	3	8	7	4	9	31	0·88
10.—Diarrhoea and enteritis	18	5	16	16	15	70	1·98
11.—Old age	10	16	11	11	9	57	1·61
12.—Enteric fever	2	4	3	2	4	15	0·42
13.—Diphtheria	1	4	6	3	5	19	0·54
14.—Dysentery	2	1	4	6	2	15	0·42
15.—Whooping cough	4	—	5	1	6	16	0·45
16.—Measles	—	1	—	1	3	5	0·14
17.—Scarlet fever	—	—	—	—	—	—	—
18.—Other Causes	186	183	159	172	170	870	24.58
TOTAL	718	687	687	735	712	3,539	100·00

(6) *Maternal Mortality.*

European Maternal Deaths, 1938-1947.

	Number of Deaths.	Percentage of Total.
Puerperal sepsis	20	37.74
Accidents of pregnancy	5	9.44
Other accidents of childbirth	10	18.87
Puerperal haemorrhage	8	15.09
Puerperal albuminuria and toxaemia	8	15.09
Other causes	2	3.77
	53	100.00

CHAPTER II.—INFECTIOUS AND COMMUNICABLE DISEASES.

(1) *Notification of Infectious Disease.*

The following is a consolidated list of the infectious and communicable diseases notified in 1947. No pretence is made that the list is at all complete and except for the diseases which still excite fear and respect, the notifications give no real indication of the actual incidence.

1. *Convention Diseases.*

Disease	European Cases.	European Deaths.	Native Cases.	Native Deaths.
Cholera	—	—	—	—
Plague	—	—	—	—
Smallpox	—	—	685	117
Typhus fever (exanthematous)	—	—	—	—
Yellow fever	—	—	—	—
2. *Tuberculosis and Silicosis.*				
Pulmonary tuberculosis	18	2	255	55
Non-pulmonary tuberculosis	1	—	31	16
Silicosis	—	—	9	1
Silicosis with active tuberculosis	—	—	18	6
3. *Infectious Diseases of Childhood.*				
Chickenpox	179	—	844	—
German measles	21	—	—	—
Mumps	84	—	36	—
Whooping cough	88	—	91	2
4. *Virus Encephalitis Group.*				
Acute anterior poliomyelitis	5	—	1	—
Polio-encephalitis	3	—	3	1
Encephalitis (not specified)	—	—	2	1
5. *Bacterial Infections.*				
Tetanus neonatorum	—	—	1	1
Scarlet fever	48	—	2	—
Erysipelas	4	—	1	—
Puerperal septicaemia	1	—	2	1
Cerebro-spinal meningitis	4	—	51	4
Meningitis—other organisms	2	—	20	7
Diphtheria	25	—	133	35
Typhoid fever	47	3	106	9
Paratyphoid fevers	1	—	5	—
6. *Miscellaneous.*				
Relapsing fever	3	—	67	—
Tick typhus	9	—	—	—
Trachoma	—	—	29	—
Trypanosomiasis	—	—	10	1

(2) *Malaria and Blackwater Fever.*

In 1946-47 the Colony experienced one of the worst droughts in its history. This had a notable effect on the incidence and distribution of malaria. *Anopheles gambiae* failed to establish its usual autumnal predominance, and because of the absence of rain and the dryness of the ground the usual multitudes of breeding places suitable for this species were not made. In the first half of 1947 the usual annual epidemic of malaria did not take place and instead cases of the disease tended to be restricted to localities near larger rivers where *A. funestus* continued to breed and *A. gambiae* maintained itself only with difficulty.

One thousand and forty cases of malaria were admitted to European hospitals and 9 deaths occurred, so that the case mortality rate was well below 1 per cent. In the Colony 24 European deaths from malaria were registered, 5 of these being of infants under one year. It is disturbing to note that though the death rate for malaria continues to fall, the proportion of the deaths occurring in the first year of life rises. In 1942-46 inclusive 181 deaths from malaria were registered, 31 occurring in infants, a proportion of 17 per cent.; in 1947 the proportion is 21 per cent.

The situation in respect of blackwater fever is much more satisfactory, and it has been a record year, only two cases with no deaths resulting being admitted to hospital and only two deaths from the disease being registered.

Trials of paludrine in prophylaxis and D.D.T. as a residual spray in the area control of mosquitoes were carried out at a number of malarious outstations. The results, though interesting, were inconclusive because the drought made the observations in untreated groups valueless.

(3) *Schistosomiasis (Bilharzia).*

In July a research team from the Medical Research Council of the United Kingdom in association with local workers carried out trials of a new drug, one of a series not previously known to have any therapeutic value, a thioxanthone known as Miracil D. This drug was given an exhaustive trial in Salisbury, but in the doses given, that is up to 300 mgm. a day, little therapeutic value was observed. Later further trials with much larger doses show more promise. The importance of the drug lies in the fact that it can be taken by mouth in tablet form and if proved successful in the cure of the disease will revolutionise the outlook in treatment. Arising out of the visit of the research team a number of other useful lines of investigation into the disease were conducted.

Field work in the trials of copper sulphate as a molluscide have been continued and it now appears that a single application at the optimum time of the year may abolish all vector snails for at least two years. Good results have been achieved by lesser concentrations of copper sulphate, provided the applications are repeated on one or two occasions.

In studies of snails artificially revived from hibernation in dried mud, none of these have yet been found infected.

This may be an important observation in showing that continuity of infection from one year to the next does not usually depend on the snail portion of the life cycle of the disease, but depends on the stage in the human being.

Cercarial antigen for skin test diagnosis has been prepared in large quantities. In addition to free distribution to medical practitioners in the Colony, supplies have been sent to the Union of South Africa, other African territories, Egypt, Palestine and South America.

Copper sulphate is supplied free of charge to landowners willing to treat their own streams, but owing to labour difficulties the amount of treatment done has been very disappointing; 1,154 lbs. were used departmentally, and 4,754 lbs. issued to private landowners.

In co-operation with the 35 mm. Film Production Unit of the Public Relations Department, a propaganda film for general audiences was made. The film called "Still Waters" has been favourably received, and when the sound track commentary has been attached it is hoped the film will be shown widely.

Work has begun on a second film designed for medical and scientific audiences which will cover in some detail all aspects of the African Schistosomiases. It is hoped this may be of value to medical schools for teaching purposes. The Department's pamphlet on the disease was completely rewritten and illustrated, and a 10,000 edition has been exhausted already.

(4) *Smallpox.*

The increase in the number of cases of this disease, 33 with no deaths in 1945, 181 with one death in 1946, continued, and a number of outbreaks was reported in Matabeleland and Northern Mashonaland; 568 cases with 103 deaths were notified in Matabeleland, a case mortality rate of 18 per cent. Smallpox of this virulence has not been encountered since 1922. There is no doubt that if vigilance against the importation of smallpox and the high vaccination protection had not been maintained the controlling of the epidemics would have been very difficult. As it was, except in the main outbreak, the smaller isolated outbreaks gave rise to few secondary cases and were soon brought under control. The disease caused a lot of anxiety and occupied too high a proportion of the time and energies of the small staff of Health Inspectors.

Five hundred and eighty-seven thousand six hundred and thirty-three vaccinations were done during 1947. Regulations were promulgated to give legal standing to vaccinations done by the "multiple pressure" technique.

(5) *Human Trypanosomiasis.*

This disease continues to smoulder in the Zambesi Valley. The "healthy carrier" type of case is occasionally met outside the tsetse fly area, but there is no evidence of the disease exacting a heavy mortality in the communities living within the fly area. Due to medical staff shortages, it has not yet been possible to arrange a survey of the people living in the areas from which the cases reported seem to originate.

(6) *Leprosy.*

Details of the cases treated at the three Leprosy Hospitals are given in Table A of the Appendix. It has been decided to close down the small colony at Mnene Mission which has been maintained for sentimental reasons. The reorganisation of the Ngomahuru Hospital and Settlement has continued, though there have been great difficulties in the provision of building material and workers.

(7) *Poliomyelitis.*

Southern Rhodesia has been fortunate to escape the epidemics of this disease which have caused anxiety in neighbouring territories.

(8) *Tuberculosis.*

The notifications of this disease do not reveal the seriousness of the present position and the impression is gained that the disease is now much more prevalent in the villages and infections in women and children are increasing. It has not been possible to segregate even the acute, highly infectious cases satisfactorily and it is feared that many foci are now being established in the remoter villages. There has been an appreciable increase in recent years of cases of non-pulmonary tuberculosis in Africans. It would be interesting to know whether these cases are infected with human or bovine strains of the organism.

(9) *Enteric Fevers.*

It was feared that as a result of the drought many polluted surface and shallow well water supplies would have to be used for domestic purposes. This did in fact happen, but there was not much increase in the incidence of diseases of this group. The most serious outbreak, at Plumtree School, where 17 cases resulted in one death, was probably due to infection from an African employed in the kitchen. In anticipation of trouble, many medical practitioners advised prophylactic inoculation and many persons were so protected.

CHAPTER III.—CURATIVE SERVICES.

(1) *European Hospitals.*

The Marandellas Hospital, which was built several years ago but not put into use because of shortage of staff, opened its doors early in November, 1947. This brings the number of European hospitals up to fifteen. A cottage hospital is now being built at Chipinga. The proposal to develop Digglefold as a tuberculosis sanatorium has been abandoned and the existing buildings are now to be used as a school. A more accessible and suitable site for this very necessary institution is now being sought.

The hospital admissions, the rate per 1,000 of the population and the average number of days spent in hospital by each patient, are as follows:—

	1947	1942	1938
General hospital admissions	13,044	12,292	8,510
Admission rate per 1,000	146	156	144
Average days in hospital	10.7	11.6	11.4

One private maternity home closed down and there are now only two of these institutions not administered by the Government. Despite this, the number of equipped beds in maternity homes has risen from 118 to 133. Much of this expansion has been possible by the use of temporary structures. However the pressure on maternity home accommodation is increasing and in 1947 there were 17 mothers per bed instead of 16 per bed in 1946.

The comparable figure for patients per bed in general hospitals is 20 in 1946 and 21 in 1947. The statistics for European institutions appear in Tables D to H and J in the Appendix.

(2) *District Nursing Service.*

Eight district nurses were employed, four on a permanent basis and four temporarily. In view of the opening of Marandellas Hospital the nurse at this centre was removed and new centres opened at Mrewa and Macheke.

The work done in 1947 by this staff is as follows:—

Number of homes visited	718
Number of home visits paid	5,730
Visits by patients to nurse	490
Ante-natal cases	108
Midwifery cases	32

(3) *Mental Diseases.*

The increase in the number of patients at the Ingutsheni Mental Hospital continues and there were 808 patients in hospital at the end of 1947, an increase of 88 over last year.

During the year 177 patients, 65 European and 112 Africans, were discharged, all of them cured. There were 22 European and 8 African voluntary patients admitted during the year; 170 cases have been released on probation and 59 of these have since been discharged and 10 re-admitted for further care.

With the recruitment of skilled staff Occupational Therapy is now in full swing. Many articles have been produced for use in other hospitals and clinics.

Despite the severe drought, farming operations were carried on, most of the produce going to the patients. Nearly 9,000 gallons of milk, 3,274 lbs. of butter and 41 tons of vegetables were produced during the year. Farming operations resulted in a profit of £284.

The main form of treatment used is electric convulsive therapy. Insulin therapy is used only on a small number of selected cases. The operation of pre-frontal leucotomy has been done on further suitable patients and 70 cases have now been done. The results have been very gratifying, especially when it is remembered that the operation is resorted to only when all other methods of treatment have failed.

(4) *Native Hospitals.*

With a continuing bottle-neck in the building industry, the condition of these institutions remains very much as it was, very unsatisfactory. Some progress has been made with minor buildings on the new native hospital sites at Salisbury and Bulawayo. Most of this work has been directed towards easing the housing accommodation for staff employed in the existing hospitals. A statistical measure of the overcrowding is the average number of in-patients in hospital each day as compared with the number of beds. In 1947 with 1,164 beds for which the general hospitals are built and equipped an average of 1,637 patients were being accommodated on any one day. The overcrowding must, therefore, be at least 50% and probably much more at peak periods. It says much for the devotion of the medical and nursing staff and the stamina of the African patients that the service has continued to function at all. The statistics relating to Native Hospitals appear in Appendices D—H.

(5) *Native Clinics.*

These figures will give some idea how this work has expanded in the past ten years:—

	1947	1942	1938
Number of Clinics	76	61	46
Inpatients treated	89,738	35,794	26,135
Outpatients treated	215,123	99,740	53,965

A number of old well-established clinics were reconstructed during the year, but little increase in the number of these institutions was possible on account of building material shortages. Demands for new clinics are frequent and great care has to be exercised in establishing new sites to open up new areas rather than reduce the area of operations of existing clinics.

Details of the work done are shown in Table B of the Appendix.

(6) *Missions.*

New financial regulations governing the extent and nature of Government aid to these institutions were promulgated early in 1947. The financial assistance now available to properly supervised mission hospitals and clinics is on a generous scale.

In improving the general standard of approved mission hospitals, the regulations also have the effect of making the less efficient institutions and those

not under trained nursing supervision abandon this field of missionary endeavour.

A summary of the medical work done by missions is as follows:—

	1947	1942	1938
Number of Medical Missions	33	34	33
Total admissions	30,768	19,947	10,680
Outpatients treated	175,130	77,283	65,438

Details of the work done in 1947 appear at Table I of the Appendix.

(7) *Native Labour on Mines.*

It has been difficult to secure much improvement in the housing and living conditions of established mines in view of the shortage of building materials, and it seems rather pointless to continue reporting on the health aspect knowing that nothing can be done to enforce the recommendations. Attention has, therefore, been devoted mainly to those items which can be remedied without the need for construction or reconstruction.

Despite the drought and the general anxiety in feeding the native population the diet standards were well maintained, many of the deficiencies reported being due to transportation difficulties.

The details of mortality on mines, death rates from disease and sickness rates for 1947 are as follows:—

(i) *Comparative Statement of Mortality on Mines,* 1943-1947.

	Twelve Months Ended November				
	1943	1944	1945	1946	1947
Average number employed at end of month	78,729	75,515	71,829	70,819	69,712
Diseases:					
Number of Deaths	574	551	564	525	488
Death rate per mille	7·29	7·30	7·85	7·41	7·00
Accidents:					
Number of Deaths	102	90	77	78	77
Death rate per mille	1·30	1·19	1·07	1·10	1·10
All Causes:					
Number of Deaths	676	641	641	603	565
Death rate per mille	8·59	8·49	8·92	8·51	8·10

(ii) *Rates of Deaths from Disease.*

Death Rate per 1,000 Employed	Twelve Months Ended November				
	1943	1944	1945	1946	1947
Pneumonia	1·87	1·85	2·20	1·81	1·79
Other Diseases	5·42	5·45	5·65	5·60	5·21
All Diseases	7·29	7·30	7·85	7·41	7·00

(iii) *Sickness, Deaths and Death Rates.*

Disease	Twelve Months Ended November, 1947		
	Number of Cases	Number of Deaths	Death Rate per Mille Employed per Annum
Malaria	4,192	20	0·29
Scurvy	141	2	0·03
Syphilis	2,551	31	0·45
Pneumonia	1,367	125	1·79
Phthisis	96	66	0·95
Other Diseases of Chest	956	14	0·20
Disentery and Diarrhoea	1,393	8	0·11
Other Intestinal Diseases	275	47	0·67
Heart	79	50	0·72
Debility	316	5	0·07
Influenza	4,682	8	0·11
Other Diseases	2,213	112	1·61
Minor Ailments	18,931	—	—
TOTAL DISEASES	37,192	488	7·00
Accidents and Injuries:			
Major	388	77	1·10
Minor	15,330	—	—
TOTAL ALL CAUSES	52,910	565	8·10

(8) *Mine Medical Services.*

Six of the larger mines or groups of mines employ full-time medical officers or medical officers whose primary function is service to the mine. It is estimated that there are about 12 medical officers so employed. As this is the first time a survey of this type of medical service to the African has been attempted the data is rather incomplete, but is reproduced below in the hope that more uniform and more complete information will be available in future years. Where blanks exist in the table the information has not been supplied.

	1 End of Report Year 31/12/47	2 End of Report Year 31/12/47	3 End of Report Year 31/8/47	4 End of Report Year 30/11/47
Number of Europeans	350 (*a*)			171
Number of Africans	3,000 (*a*)	1,832 (*a*)		
European Hospital Admissions ..	None	None	246	None
African Hospital Admissions ..	408	975	9,238	1,990
African Out-patients treated	3,796	1,744	2,042	
Workmen's Compensation cases ..	511			
Number of Beds in European Hospitals	None	None		None
Number of Beds in African Hospital		69		110

(*a*) Includes Wives and Dependants.

1.—Rezende Mine, Penhalonga.

2.—Globe and Phoenix Mine, Que Que.

3.—Wankie Colliery, Wankie.

4.—Cam and Motor Mine, Eiffel Flats.

(9) *Native Medical Services Generally.*

The pressure on all types of medical service for the African population continues and the enlargement of existing institutions, the rebuilding of obsolete hospitals and clinics and the extension of services may be planned and discussed but to little avail because of the shortage of building material and artisans. This is hindering expansion now and will continue to do so long after the present shortages have been eased as a much bigger proportion of finance and works will have to be devoted to existing institutions which have proved their usefulness to the African community but need modernising.

The following details of in-patient treatment in the various types of hospital and clinic will give some measure of the expansion in medical care for Africans. The number of institutions in each case is shown in brackets.

	1947	1942	1938
Native Hospitals	38,815 (13)	21,315 (13)	19,731 (13)
V.D. Sections of Native Hospitals	3,902 (11)	4,530 (12)	1,701 (8)
Mental Hospital	259 (1)	170 (1)	157 (1)
Leper Hospitals	270 (2)	213 (3)	297 (4)
Government Native Clinics	89,738 (76)	35,794 (61)	26,135 (46)
Mission Clinics	30,768 (33)	19,947 (34)	10,680 (33)
TOTAL	164,752	81,969	58,701
Admission Rate per 1,000	92·9	56·4	44·8

CHAPTER IV.—PREVENTIVE HEALTH SERVICES.

(1) *Laboratories.*

The reports of the three routine laboratories are reproduced in full in Appendices N, O and P to the Report.

The total number of specimens examined are enumerated below:—

	1947	1942	1938
Public Health Laboratory, Salisbury	70,789	45,201	44,192
Hospital Laboratory, Umtali	11,348	—	—
Public Health Laboratory, Bulawayo	60,802	22,696	8,578
Hospital Laboratory, Gwelo	15,624	—	—
Government Analyst's Laboratory	2,258	1,663	1,201
Total	160,821	69,560	53,971

Permanent appointments were made during the year of Directors of the two Public Health Laboratories. During the war years these laboratories were supervised by medical officers chosen from the ranks of the Government Medical Officers. Steps are being taken to place the training of male technical assistants on a proper basis so that opportunities for promotion to higher salary grades will be made possible. Two mobile laboratories were put into service during the year and have been subjected to testing under local weather and road conditions. On the whole they have proved to be suitable for the work. On April 1st, 1947, financial responsibility for the Research Laboratory was taken over from the State Lottery Trustees who had been responsible for the construction and the costs of maintenance and equipment since its inception. The work of this laboratory is dealt with under the headings Malaria and Schistosomiasis in Chapter II.

(2) *Schools Medical Service.*

The medical inspector staff is now four, an additional male schools medical officer having been recruited during the year and stationed at Bulawayo.

The detailed findings at School Medical Inspection appear in Tables K, L and M of the Appendix. The recording of information on the inspection of African school children has just begun and the figures so far are small and Tables L and M have this year been combined.

The enrolment in European, Coloured and Indian Schools, which are subject to regular inspection, was 18,516 children at mid-1947, distributed in 128 schools.

The following is a summary of the work done by the staff:—

	1947	1942	1938
European children examined (a)	8,414	3,091	5,775
Asiatic and Coloured children examined (a)	1,482	239	656
African children examined	416	—	—
European entrants unvaccinated	544	230	555
Asiatic and Coloured entrants unvaccinated	105	31	82
Unsatisfactory Nutrition per cent.—			
European children	13	8.6	23.5
Asiatic and Coloured children	25.5	28.3	34.1
African children	16	—	—
Intelligence Testing retarded: European children	172	627(b)	220
Percentage below I.Q.80	45.0	16.9	73.0

(a) Includes children re-examined and specially examined.

(b) This group was composed of two whole class groups and not of children referred on account of educational retardation.

(3) *Government Dental Service.*

There are now five Government Dental Surgeons and a third centre is maintained at Gwelo, from where a dental surgeon attends to the Government Schools in the Midlands and other dental work in the area.

SCHOOLS.

	Mashonaland and Manicaland.	Midlands.	Matabeleland.
Number of children examined	6,796	783	6,043
Number of children treated	848	302	520
Number of fillings—			
Temporary teeth	178	432	323
Permanent teeth	943	998	334
Number of extractions—			
Temporary teeth	878	286	521
Permanent teeth	162	45	32
Number of other operations	—	—	—
Number of scalings	15	—	—

B.S.A.P., PERMANENT STAFF CORPS AND PRISON SERVICES.

	Mashonaland and Manicaland.	Midlands.	Matabeleland.
Number of extractions	116	—	30
Number of fillings	315	71	68
Number of dentures supplied	42	—	4
Number of dentures repaired	9	—	4
Other operations	287	1	14

INDIGENT EUROPEANS AND AFRICANS.

	Mashonaland and Manicaland.	Midlands.	Matabeleland.
Number of extractions	2,792	9	1,890
Number of fillings	36	—	84
Number of dentures supplied	93	—	19
Number of dentures repaired	24	—	8
Other operations	—	—	26

(4) *Health of the B.S.A. Police.*

There has been little change in the health record of this force, the European members of which maintain an unblemished record of no cases of venereal disease reported for six years.

	European.	African.
Number sick	731	1,596
Days lost	9,547	12,163
Average days lost per case	13.06	7.64
Cases of venereal disease	—	64
Number discharged medically unfit	9	5
Deaths	2	5

Note: Light duty is counted as half a day's duty lost.

(5) *Health Inspectorate.*

Due to a number of resignations, the full establishment of 16 health inspectors was not maintained, the strength averaging 12 during the year. The work done this year shows an increase, but a great deal of the value of the work is nullified by obsolete and ineffective legislative sanction. A complete overhaul of public health legislation is required.

Three health inspectors working in Matabeleland districts have been placed under the supervision of a Health Officer stationed at Bulawayo, who co-ordinates and directs their activities.

The following is a summary of the work done during the year :—

	1947	1942
Vaccinations	861,330	147,267
Diphtheria prophylaxis	5,971	—
Routine inspection of premises	9,253	3,420
Number of inspectors employed	12	4

There were no Health Inspectors in the Service in 1938.

(6) *Nutrition Services.*

A National Nutrition Council has now been established with comprehensive representation of unofficial organisations and the interested Government Departments. The Council has appointed three permanent sub-committees, Agriculture and Economics, Nutrition Education and Research. Attention has been devoted to emergency short-term measures to encourage food production especially in view of the extreme drought conditions during the year.

Because of the absence of any suitable existing organisation to undertake the ordering and distribution of milk and other food to school children in African schools little progress has been made with the supplementary feeding of under-nourished school children.

(7) *Aviation Health.*

It has been difficult with the small existing administrative staff to organise a comprehensive service for checking and examination of health documents and the spraying of aircraft; and the type of organisation is not yet stable.

Two air passengers from the United Kingdom have had to be quarantined in mosquito-proof quarters because of the lack of yellow fever certificates. The surveillance of many passengers from Egypt for cholera was also arranged.

All aircraft making their first landing from a yellow fever area or not in possession of a proper certificate are disinsected by the aid of a "pyrethrum bomb."

One hundred and fifty-five pilots were examined for "B" licences during the year.

(8) *Local Authority Services.*

It is thought that the Report on the Public Health should include reference to the health work done by Local Authorities, especially as they are responsible for more than half the European population of the Colony who live within their areas. The two larger towns, Salisbury and Bulawayo, produce their own annual health reports in printed form. The details of the professional staff employed by local health authorities during 1947 are given below :—

Local Authority	Medical Officers of Health	Health Inspectors	Health Visitors
City of Salisbury	Two, and a Lady Clinical Officer	Eight	Four
City of Bulawayo	One	Six	Two
Municipality of Gatooma	Part-time	Services of Government Health Inspector	None
Municipality of Gwelo	Part-time	One	None
Municipality of Que Que	Part-time	Services of Government Health Inspector	None
Municipality of Umtali	Part-time	One	None

The smaller authorities restrict their activities to the problems of environmental health, meat and food inspection, water supplies and the treatment of infectious and venereal disease.

The two cities, on the other hand, provide a comprehensive health service for their areas, including maternity and child welfare, health visitors, infectious diseases hospitals for Europeans, immunisation clinics and the other services offered by modern urban public health practice.

The Central Government makes substantial contributions towards the cost of these services. The following precis will give some indication of the scope of the services performed by the two larger local authorities :—

	Salisbury 1946-47	Bulawayo 1945-46
Admissions, European Infectious Diseases Hospital	163	375
Admissions, Native Infectious Diseases Hospital	1,639	755
Admissions, Native V.D. Hospital	1,686	1,545
Attendances, Native V.D. Clinics	27,898	91,353
New cases of syphilis in Africans	1,492	964
New cases of gonorrhoea in Africans	1,201	2,957
Medical examination of Africans in employment	45,727	23,533
Laboratory investigations	20,277	(a)
Cases seen at ante-natal clinics—all races	3,338	3,635
Infant and child welfare clinics attendances—all races	27,597	16,760
Diphtheria immunisation	(a)	2,801
Vaccination	30,471	5,863
Visits by Health Visitors	8,591	7,932
Inspections by Health Inspectors	35,405	(a)
Total admissions of Africans to local authority hospitals	4,029	2,964
Estimated European population	17,000	15,200
Estimated Coloured and Asiatic population	1,740	1,774
Estimated Native population	49,056	30,244

(a) Figures not given.

CHAPTER V.—ADMINISTRATION AND MISCELLANEOUS.

(1) *Staff (Establishment).*

1.	Medical Officers—		
	At Headquarters (Medical Director 1, Health Officers 2, Field Officer 1, Schools Medical Officers 4)	8	
	In Districts (Senior Government Medical Officers 5, Government Medical Officers 45, Aided Government Medical Officers 4)	54	
	Specialists (Directors of Laboratories 2, Pathologist 1, Superintendents Mental and Leprosy Institutions 3, Radiologists 3, Psychiatrists 1)	10	
	Resident Medical Officers	11	
	Total		83
2.	Dental Surgeons		5
3.	Analytical Chemists		4
4.	Pharmaceutical Chemists:		
	At Headquarters	4	
	Medical Store	5	
	At Hospitals (Hospital Secretaries 7, Dispensers 2)	9	
	Total		18
5.	Health Inspectors		17
6.	Laboratory Technical Assistants		17
7.	Medical Entomologist		1
8.	Anti-malaria Officer, Victoria Falls		1
9.	Nurses (Staff Matron 1, Matrons 26, Sisters Tutor 5, Sisters 54, Qualified General Nurses 205, District Nurses 10, Mental Nurses 45, Student Nurses 172)		518
10.	Orthopaedic Technician		1
11.	Radiographers (including learners)		20

12.	Masseuses	7
13.	Dietitians	4
14.	Other European Staff	164
15.	Asiatic and African Staff	1,530
	Total	2,390

The list includes a number of posts on establishment which are temporarily vacant, but does not include various part-time workers such as consultants and relieving staff.

(2) *Nursing Service.*

During 1947 the nursing position improved and it was possible to open the Marandellas Hospital. Recruits to the Services are available, but the limiting factor is now shortage of accommodation in Nurses' Homes.

The staff position at the end of 1947 was as follows:—

	Establishment.	Employed.
Matrons	26	25
Sister Tutors	5	5
Sisters	54	27
Qualified Nurses	205	166
District Matron	1	—
District Sisters	2	3
District Nurses	7	5
	300	231
Student Nurses	172	135
Auxiliary Nurses	20	12
	492	378

The trained staff employed has increased by 56 over the number employed last year, but there is still much leeway to make up. Of 90 trained staff recruited during the year only seven were trained locally, which is very disappointing in view of the number of potential trained nurses who should be coming forward after training. Marriage is the cause for this wastage. Overseas recruits have included a number of nurses trained in Australasia. Losses have, as always, been high, 33 trained staff resigning during the year, 22 in order to marry. The pioneer of the District Nursing Service, Miss Swemmer, died during the year, and her passing has been widely regretted, but especially by the people whom she served with great devotion, the people of the Shamva district.

The temporary staff have given most useful service and as most of them live in their own homes the pressure on accommodation has been eased. A new departure has been the employment at Bulawayo Hospital of four fully qualified African nurses.

The mental nursing staff position has now become more satisfactory for the first time for many years.

(3) *Medical Council of Southern Rhodesia.*

The numbers on the various Registers at the end of 1947 are as follows, not all necessarily residing in Southern Rhodesia:—

	Additions.	Total at 31.12.47
Medical practitioners	35	276
Dental surgeons	9	49
Chemists and druggists	19	116
Opticians	6	6
Trained Nurses—General	68	566
Trained Nurses—Mental	6	21
Trained Nurses—Sick Children	—	4
Midwives	68	223
Masseurs and Masseuses	—	17
Radiographers	3	5
Sanitary (Health) Inspectors	6	34
Meat and Other Food Inspectors	5	30
Native Nursing Orderlies	23	97
Native Health Demonstrators	9	9

Two new Registers were opened during the year, one for Opticians, the other for Native Health Demonstrators.

(4) *Training.*

(i) *Nursing Training.*

The following are the results of training of European probationer nurses at the Salisbury and Bulawayo Hospitals :—

	Number of candidates.	Number passed.	Number failed.
Preliminary Examination	52	30	22
Final Examination	31	25	6

Three nurses passed with honours.

(ii) *Native Male Nursing Orderlies.*

These are trained for three years at the Salisbury and Bulawayo Native Hospitals and the results in 1947 were as follows :—

	Number of candidates.	Number passed.	Number failed.
Lower Examinations	26	18	8
Higher Examinations	23	23	—

(iii) *Health Inspectors.*

Two candidates at the second attempt passed the examination conducted for the Royal Sanitary Institute by the Medical Council. Training and local examination for the Royal Sanitary Institute have now ceased, the last remaining student failing to pass the examination in January, 1948.

(iv) *Native Health Demonstrators.*

Nine candidates trained at a special one-year course organised at Domboshawa Government School passed the examination and were admitted to the Register. They have been posted in pairs at selected centres and the work they do and the results achieved will be watched with great interest.

(5) *Military Pensions.*

The aftermath of war has created a great deal of work in the investigation and periodic review by medical boards of ex-Service pensioners.

The proportion of pensioners in Southern Rhodesia is very high, probably one in seven of those on active service are in receipt of military pensions. The medical boards are conducted by medical officers in Government Service with the assistance of the Honorary Consultants. The following are the numbers of medical boards conducted during 1947 :—

Southern Rhodesia Pensioners :	European	1,071
	Coloured	31
	African	75
New claims to pension—Southern Rhodesia		93
Pensioners for Northern Rhodesia		1
Pensioners for Imperial Authorities		51
Pensioners for Union of South Africa		86
Pensioners for elsewhere in the Empire		4
Total		1,412

(6) *St. John Ambulance and Red Cross Association.*

The two organisations have maintained the high standard of their service to the public and in the extension of the work of their African branches do a great service in the propagation of simple instruction in first aid and hygiene.

Both organisations contribute to the Auxiliary Nursing Service and assist at schools medical inspections. They provided the nursing attention at the Annual Cadet Camp and their work at the various centres during the Royal Visit received the highest praise. The Medical Comforts Depots from which patients can borrow expensive articles of nursing equipment have filled a big need and the service has been much appreciated by grateful patients.

The Blood Transfusion Services have been maintained and expanded to deal with the increasing demands, though at times there has been difficulty in maintaining a panel of African donors. An African service has now been established at Umtali.

Training activities have been carried on vigorously. St. John Ambulance Association gained a total of 945 certificates and performed over 14,000 hours

of hospital duty. Of particular interest is the establishment of the first African division in an industrial concern, a large brewery.

The British Red Cross Society report a great extension of their African work and 20 school teachers have now qualified as B.R.C.S. instructors. There is no doubt that this is a wise measure, as instruction can best be given to Africans by their own race in their own language.

Three hundred and fifty-nine blood transfusions were given by members of the Society during 1947.

(7) *Habit-forming Drugs.*

Import Certificates.

Ninety-eight permits were issued during 1947. This compared with 56 in 1946.

Actual Imports.

Drug.	grammes.
Medicinal Opium	484
Opium (in tinctures, extracts and other preparations)	18,165
Indian Hemp (in form of galenicals)	Nil
Morphine Alkaloid	850
Diacetyl Morphine (Heroin) Alkaloid	445
Cocaine Alkaloid	1,618
Methyl Morphine (Codeine) Alkaloid	2,786
Ethyl Morphine (Dionine) Alkaloid	Nil
Pethidine Base	1,626

Export Certificates.

Forty-two permits were issued during 1947 compared with 17 for 1946.

Actual Exports.

Drug.	grammes.
Medicinal Opium	Nil
Opium (in tinctures, extracts and other preparations)	2,770
Indian Hemp (in form of galenicals)	Nil
Morphine Alkaloid	66
Diacetyl Morphine (Heroin) Alkaloid	51
Cocaine Alkaloid	104
Methyl Morphine (Codeine) Alkaloid	250
Ethyl Morphine (Dionine) Alkaloid	19
Pethidine Base	42

During the year and in conformity with the United Kingdom and the Union of South Africa, Pethidine was gazetted as an additional drug in the Colony's list of Dangerous Drugs.

It was also noted that during the year the number of import and export permits issued had greatly increased over previous years, and it was decided to appoint two members of the Public Health Department Pharmaceutical staff as inspectors under the provisions of the Dangerous Drugs Act.

R. M. MORRIS, M.D., D.P.H.,
Medical Director and Chief Health Officer.

LEPROSY, 1947. TABLE A.

Institution	Race of Patients	Number on Registers 1/1/47	Admissions	Readmitted for Treatment	Readmitted for Economic Reasons	Discharged	Died	Deserted	Number on Registers 31/12/47	Total Treated	Babies Born
Ngomahuru	European	5	—	1	—	—	—	—	6	6	—
	Coloured	1	1	—	—	1	1	—	—	2	—
	Native	625	187	57	2	63	34	23	751	871	12
Mtemwa	Native	576	83	57	—	26	25	51	601	703	6
Mnene	Native	16	—	—	—	—	3	2	11	16	—
TOTAL		1,223	271	115	2	90	63	76	1,369	1,598	18

Clinic	Admissions			In-patient Units			Deaths			Out-patients			Out-patient Treatments		
	V.D.	Other	Total	V.D.	Other	Total	V.D.	Other	Total	V.D.	Other	Total	V.D.	Other	Total
Antelope	—	37	37	—	400	400	—	—	—	325	5,723	6,048	1,641	12,864	14,505
Arrowan	131	825	956	3,129	15,368	18,497	—	16	16	142	837	979	475	2,919	3,394
Banket	285	1,539	1,824	10,767	14,167	24,934	—	28	28	230	2,614	2,844	800	14,477	15,277
Belingwe	217	1,131	1,348	6,295	22,186	28,481	4	43	47	145	428	573	1,160	2,568	3,728
Birchenough ..	18	869	887	756	12,527	13,283	—	7	7	—	3,413	3,413	—	12,605	12,605
Bubera	74	395	469	3,032	8,936	11,968	—	5	5	227	1,909	2,136	1,272	9,834	11,106
Chibi	492	1,413	1,905	9,804	18,455	28,259	2	9	11	6	2,105	2,111	50	24,565	24,615
Chiduku	33	219	252	476	6,002	6,478	—	—	—	122	1,837	1,959	865	13,778	14,643
Chilimanzi ..	133	702	835	6,375	18,813	25,188	3	14	17	97	1,643	1,740	1,492	10,195	11,687
Chinomwe ..	148	868	1,016	5,830	9,708	15,538	1	9	10	115	1,400	1,515	694	4,556	5,250
Chinyika	23	170	193	610	740	1,350	—	3	3	9	382	391	24	882	906
Chipinga	128	1,290	1,418	3,503	19,331	22,834	3	23	26	104	1,763	1,867	676	19,568	20,244
Concession ..	928	1,263	2,191	16,437	21,404	37,841	8	93	101	110	872	982	660	3,943	4,603
Darwendale ..	147	328	475	6,558	5,445	12,003	5	12	17	27	1,695	1,722	123	6,109	6,232
Essexvale ..	306	704	1,010	13,219	14,247	27,466	6	18	24	302	2,436	2,738	1,812	14,616	16,428
Filabusi	323	1,857	2,180	13,875	31,032	44,907	18	76	94	618	2,950	3,568	1,844	8,850	10,694
Fort Usher ..	684	47	731	24,620	1,068	25,688	3	—	3	386	1,828	2,214	1,603	3,068	4,671
Gokwe	119	560	679	3,902	12,798	16,700	—	7	7	27	612	639	413	6,951	7,364
Gutu	275	1,661	1,936	10,256	36,171	46,427	7	14	21	179	1,576	1,755	535	3,477	4,012
Hartley	401	1,542	1,943	13,149	19,457	32,606	3	53	56	376	6,501	6,877	896	13,716	14,612
Highfield	—	860	860	—	8,814	8,814	—	20	20	428	10,296	10,724	3,923	47,667	51,590
Inyanga	112	1,256	1,368	1,654	14,190	15,844	3	9	12	232	3,788	4,020	1,500	21,084	22,584
Inyati	276	889	1,165	16,202	16,781	32,983	2	52	54	185	481	666	1,250	7,309	8,559
Jena	65	243	308	3,172	6,007	9,179	—	6	6	293	3,305	3,598	2,450	17,727	20,177
Karoi	—	—	—	—	—	—	—	—	—	8	400	408	86	491	577
Kezi	—	—	—	—	—	—	—	—	—	165	934	1,099	175	1,702	1,877
Kutama	263	534	797	12,558	6,538	19,096	—	7	7	183	12,005	12,188	3,630	36,015	39,645
Kwenda	146	822	968	2,128	8,525	10,653	—	5	5	213	4,236	4,449	1,369	16,224	17,593
Lady Mary Baring	55	72	127	880	1,512	2,392	4	2	6	106	586	692	1,696	11,406	13,102
Loreto	11	402	413	191	5,233	5,424	2	7	9	200	3,862	4,062	2,841	15,023	17,864
Lukosi	203	319	522	7,751	8,686	16,437	3	12	15	59	725	784	708	4,350	5,058
Lupani	—	411	411	—	6,165	6,165	—	2	2	—	4,328	4,328	—	17,312	17,312

Clinic	Admissions			In-patient Units			Deaths			Out-patients			Out-patient Treatments		
	V.D.	Other	Total	V.D.	Other	Total	V.D.	Other	Total	V.D.	Other	Total	V.D.	Other	Total
Luveve	2	438	440	403	8,283	8,686	—	3	3	119	6,610	6,429	613	15,399	16,012
Mabedzenge ..	—	—	—	—	—	—	—	—	—	—	4,229	4,229	—	8,981	8,981
Makumbi	41	1,448	1,489	824	14,200	15,024	—	20	20	81	6,858	6,939	486	27,232	27,718
Marandellas ..	644	2,071	2,715	29,818	28,691	58,509	3	71	74	42	2,689	2,731	118	15,914	16,032
Maranke	67	548	615	815	3,827	4,642	—	8	8	199	1,550	1,749	794	6,452	7,246
Matibi	609	888	1,497	8,102	14,111	22,213	2	3	5	113	733	846	1,356	3,726	5,082
Melsetter	3	30	33	24	285	309	—	1	1	21	159	180	69	688	757
Miami	169	861	1,030	6,188	13,404	19,592	2	22	24	54	1,695	1,749	324	5,214	5,538
Mondoro	170	1,299	1,469	2,479	15,071	17,550	—	2	2	233	4,172	4,405	423	13,506	13,929
Mphoengs ..	62	140	202	1,034	2,322	3,356	—	1	1	232	553	785	1,903	5,013	6,916
Mt. Darwin ..	179	662	841	2,880	12,439	15,319	1	8	9	215	1,349	1,564	541	7,822	8,363
Mrewa	253	1,697	1,950	9,575	22,367	31,942	—	31	31	—	4,959	4,959	—	10,010	10,010
Mtoko	263	3,592	3,855	8,725	28,830	37,555	3	51	54	346	4,251	4,597	649	7,908	8,557
Nkai (Shangani) ..	518	829	1,347	19,033	25,296	44,329	3	7	10	225	905	1,130	2,095	5,862	7,957
Norton	258	530	788	6,359	10,964	17,323	—	4	4	16	1,922	1,938	231	5,505	5,736
Nyamandhlovu ..	175	737	912	5,566	11,852	17,408	—	16	16	112	1,363	1,475	1,190	7,626	8,816
Nyamazuwi ..	104	1,186	1,290	2,726	11,615	14,341	—	—	—	12	2,633	2,645	12	5,323	5,335
Nyanyadzi ..	165	829	994	3,976	14,341	18,317	2	9	11	179	3,108	3,287	932	24,221	25,153
Odzi	511	671	1,182	6,099	4,565	10,664	1	5	6	105	1,973	2,078	671	10,054	10,725
Plumtree	304	718	1,022	26,210	32,400	58,610	—	35	35	750	2,432	3,182	6,232	22,049	28,281
Range	712	706	1,418	15,620	9,862	25,482	—	—	—	146	921	1,067	379	2,464	2,843
Rosa	62	722	784	1,144	8,672	9,816	2	17	19	188	6,386	6,574	791	15,977	16,768
Selukwe	378	981	1,359	17,660	14,007	31,667	2	38	40	739	5,298	6,037	1,777	11,128	12,905
Shabani	—	—	—	—	—	—	—	—	—	1,437	5,035	6,472	11,728	67,420	79,148
Shiota	220	1,236	1,456	13,431	26,165	39,596	2	10	12	2	5,656	5,658	7	32,654	32,661
Sipepa	402	263	665	24,758	7,594	32,352	3	8	11	140	1,840	1,980	395	4,163	4,558
Sipolilo	34	959	993	929	13,651	14,580	2	6	8	24	1,610	1,634	69	5,083	5,152
Stanley	44	183	227	1,462	4,081	5,543	—	2	2	271	1,821	2,092	2,458	4,375	6,833
Tjolotjo	225	697	922	5,451	10,914	16,365	3	7	10	317	1,575	1,892	1,146	8,380	9,526
Tsonzo	9	361	370	294	3,762	4,056	—	10	10	407	5,394	5,801	1,543	8,639	10,182
Umvuma	246	1,352	1,598	13,218	27,235	40,453	4	14	18	43	3,417	3,460	189	12,221	12,410
Urungwe	—	—	—	—	—	—	—	—	—	—	450	450	—	533	533
Victoria Falls ..	—	—	—	—	—	—	—	—	—	—	9,659	9,659	—	20,379	20,379
Wedza	396	1,963	2,359	12,121	12,957	25,078	1	8	9	117	4,224	4,341	1,085	5,561	6,646
TOTAL (66)	13,221	51,825	65,046	444,053	784,469	1,228,522	113	969	1,082	12,504	194,599	207,103	76,869	793,333	870,202

Clinic	Admissions			In-patient Units			Deaths			Out-patients			Out-patient Treatments		
	V.D.	Other	Total	V.D.	Other	Total	V.D.	Other	Total	V.D.	Other	Total	V.D.	Other	Total
Ndanga	2,936	2,762	5,698	66,480	57,562	124,042	41	42	83	—	—	—	—	—	2,222
Bikita	359	2,144	2,503	9,668	59,232	68,900	4	27	31	—	—	—	—	—	2,121
Chichidza	119	1,278	1,397	4,010	39,048	43,058	3	20	23	—	—	—	—	—	4,794
Chiduma	57	1,019	1,076	3,617	68,697	72,314	2	2	4	—	—	—	—	—	1,748
Chikuku (C) ..	182	964	1,146	9,634	40,814	50,448	3	12	15	—	—	—	—	—	1,577
Chingombe ..	811	4,949	5,760	19,687	123,134	142,821	1	28	29	—	—	—	—	—	12,919
Chitando (G) ..	475	2,593	3,068	12,108	69,223	81,331	1	14	15	—	—	—	—	—	2,803
Matsai (A) ..	351	1,601	1,952	12,291	49,293	61,584	2	22	24	—	—	—	—	—	1,904
Sangwe	48	801	849	2,929	32,855	35,781	1	7	8	—	—	—	—	—	1,085
Siyawarewa (B) ..	293	950	1,243	9,546	35,105	44,651	3	15	18	—	—	—	—	—	2,503
TOTAL NDANGA GROUP (10) ..	5,631	19,061	24,692	149,967	574,963	724,930	61	190	251	—	—	—	—	—	33,676
GRAND TOTAL (76)	18,852	70,886	89,738	594,020	1,359,432	1,953,452	174	1,159	1,339	—	—	—	—	—	903,878

TABLE C.

CLASSIFICATION OF EUROPEAN DEATHS, 1947.

Deaths Classified according to the International List of Causes of Sickness and Death : Fifth Decennial REVISION.

International List No.	Cause of Death.	No. of Deaths.
	I.—*Infective and Parasitic Diseases.*	
1	Typhoid fever	2
6	Cerebro-spinal (meningococcal) meningitis	1
9	Whooping cough	4
10	Diphtheria	1
12	Tetanus	1
13	Tuberculosis of the respiratory system—	
	(a) With mention of occupational disease of lung	1
	(b) Without mention of occupational disease of lung	4
14	Tuberculosis of the meninges and central nervous system	1
15	Tuberculosis of the intestines and peritoneum	1
21	Tuberculosis of other organs	1
27	Dysentery	2
28	Malaria	24
28d	Blackwater fever	1
30	Syphilis—	
	(c) Aneurysm of the aorta	1
	(d) Other forms of syphilis	1
33	Influenza	3
36	Acute poliomyelitis and polioencephalitis	1
44	Other infective or parasitic diseases	1
	II.—*Cancer and other Tumours.*	
45	Cancer of the buccul cavity and pharynx	3
46	Cancer of the digestive organs and peritoneum	60
47	Cancer of the respiratory system	12
48	Cancer of the uterus	4
49	Cancer of other female genital organs	3
50	Cancer of the breast	9
51	Cancer of the male genital organs	5
52	Cancer of the urinary organs	3
53	Cancer of the skin (scrotum excepted)	2
54	Cancer of the brain and other parts of the nervous system	2
55	Cancer of other or unspecified organs	5
56	Non-malignant tumours	2
	III.—*Rheumatism, Diseases of Nutrition and of the Endocrine Glands, Other General Diseases and Vitamin Deficiency Diseases.*	
58	Rheumatic fever	4
59	Chronic rheumatism and other rheumatic diseases	5
60	Gout	1
61	Diabetes mellitus	23
63	Diseases of the thyroid and parathyroid glands	3
65	Diseases of the adrenal glands (not specified as tuberculosis)	2
66	Other general diseases	1
69	Pellagra	1
	IV.—*Diseases of the Blood and Blood-forming Organs.*	
72	Haemorrhagic conditions	2
73	Anaemias	5
74	Leukaemias and eleukaemias	5
75	Diseases of the spleen	2
	VI.—*Diseases of the Nervous System and Sense Organs.*	
80	Encephalitis (non-epidemic)	5
81	Meningitis (non-meningococcal)	1
82	Diseases of the medulla and spinal cord	1
	Carried forward	

International List No.	Cause of Death.	No. of Deaths.
	Brought forward	
83	Intra-cranial lesions of vascular origin	47
84	Mental disorders and deficiency	11
85	Epilepsy	3
87	Other diseases of the nervous system	2
	VII.—*Diseases of the Circulatory System.*	
90	Pericarditis	1
91	Acute endocarditis	5
92	Chronic affections of the valves and endocardium	11
93	Diseases of the myocardium	39
94	Diseases of the coronary arteries, angina pectoris	56
95	Other diseases of the heart	11
96	Aneurysm (except of heart and aorta)	1
97	Arteriosclerosis (excluding coronary or venal sclerosis or cerebral haemorrhage)	13
98	Gangrene	1
99	Other diseases of the arteries	2
102	High blood pressure (idiopathic)	15
	VIII.—*Diseases of the Respiratory System.*	
106	Bronchitis	5
107	Broncho-pneumonia	6
108	Lobar pneumonia	10
109	Pneumonia (unspecified)	5
111	Congestion, oedema, haemorrhagic infarction and thrombosis of the lung	2
112	Asthma	4
114	Other diseases of the respiratory system— (a) Silicosis and other occupational pneumonoconioses	1
	IX.—*Diseases of the Digestive System.*	
117	Ulcer of the stomach or duodenum	7
118	Other diseases of the stomach	1
119 & 120	Enteritis and diarrhoea	18
121	Appendicitis	5
122	Hernia, intestinal obstruction	6
123	Other diseases of the intestines	1
124	Cirrhosis of the liver	7
125	Other diseases of the liver	4
126	Biliary calculi	2
127	Other diseases of the gall bladder and bile ducts	1
128	Diseases of the pancreas (other than diabetes)	3
	X.—*Diseases of the Urinary and Genital Systems (not Venereal or connected with Pregnancy or the Puerperium).*	
130	Acute nephritis	1
131	Chronic nephritis	14
132	Nephritis not stated to be acute or chronic (over 10 years of age)	9
133	Other diseases of the kidney and ureters	1
136	Diseases of the urethra, urinary abscess, etc.	1
137	Diseases of the prostate	5
	XI.—*Diseases of Pregnancy, Childbirth and Theypuerperal State.*	
142	Ectopic gestation	1
144	Toxaemias of pregnancy	1
149	Other accidents of childbirth	2
	XIII.—*Diseases of the Bones and Organs of Movement.*	
156	Diseases of the joints and other organs of movement	1
	XIV.—*Congenital Malformations.*	
157	Congenital malformations	9
	Carried forward	

International List No.	Cause of Death.	No. of Deaths.
	Brought forward	
	XV.—*Diseases Peculiar to the First Year of Life.*	
158	Congenital debility	3
159	Premature birth	30
160	Injury at birth	6
161	Other diseases peculiar to the first year of life	14
	XVI.—*Senility, Old Age.*	
162	Senility, old age	10
	XVII.—*Deaths from Violence.*	
163	Suicide by poisoning—	
	(a) Suicide by solid or liquid toxic or corrosive substances	3
	(b) Suicide by poisonous gas	1
164	Other forms of suicide—	
	(c) Suicide by firearms and explosives	11
	(d) Suicide by other or unspecified means	1
166	Homicide by firearms	2
168	Homicide by other or unspecified means	1
169	Railway accidents (any cause of death except war)	3
170	Motor vehicle accidents (any cause of death except war)	19
173	Air transport accidents (any cause of death except war)	4
174	Accidents in mines and quarries (any cause of death except war)	3
175	Agricultural and forestry accidents (any cause of death except war)	1
179	Other acute accidental poisoning (not by gas)	1
182	Accidental mechanical suffocation	3
183	Accidental drowning	1
184	Accidental injury by firearms	4
186	Accidental injury by fall, crushing, landslide, etc.	5
188	Injury by animals	1
193	Other accidents due to electric currents	1
195	Other accidents	5
	XVIII.—*Ill-defined Causes of Death.*	
200	Cause of death unstated or ill-defined	12
	Total	718

ADMISSIONS TO GOVERNMENT HOSPITALS, 1947. TABLE D.

Hospital	Europ-ean	Native V.D.	Natives other than V.D.	Total	Deaths: Europ-ean	Deaths: Native V.D.	Deaths: Natives other than V.D.
Salisbury	3,144	—	7,753	10,897	112	—	481
Bulawayo	4,312	154	9,243	13,709	128	—	577
Bindura	253	16	1,632	1,901	5	—	73
Enkeldoorn	172	14	1,388	1,574	5	2	65
Fort Victoria	377	336	1,430	2,143	7	3	70
Gatooma	1,004	835	4,019	5,858	15	2	204
Gwanda	143	311	1,741	2,195	3	2	69
Gwelo	845	439	2,676	3,960	25	3	142
Marandellas	41	—	—	41	3	—	—
Que Que	487	402	1,725	2,614	7	13	131
Rusapi	286	382	1,169	1,837	3	—	31
Selukwe	290	—	—	290	5	—	—
Shamva	10	714	1,070	1,794	1	10	36
Sinoia	272	299	1,531	2,102	3	3	99
Umtali	1,111	—	4,438	5,549	27	—	141
TOTAL	12,747	3,902	39,815	56,464	349	38	2,119
Ingutsheni	86	—	259	345	14	—	66
Nervous Disorders ..	243	—	—	243	1	—	—
GRAND TOTAL ..	13,076	3,902	40,074	57,052	364	38	2,185

TABLE E.

OUT-PATIENT ATTENDANCES (EXCLUDING VENEREAL DISEASE), GOVERNMENT HOSPITALS, 1947.

Hospital	European	Coloured and Natives	Total
Salisbury	20,173	88,229	108,402
Bulawayo	8,634	90,802	99,436
Bindura	334	1,675	2,009
Enkeldoorn	699	2,544	3,243
Fort Victoria	2,022	6,200	8,222
Gatooma	1,073	15,963	17,036
Gwanda	720	1,685	2,305
Gwelo	2,131	22,341	24,472
Marandellas	15	—	15
Que Que	160	996	1,156
Rusapi	359	14,633	14,992
Selukwe	188	—	188
Shamva	51	—	51
Sinoia	161	8,645	8,806
Umtali	380	11,897	12,277
TOTAL	37,100	265,610	302,710

TABLE F.

FREE PATIENTS MAINTAINED IN GOVERNMENT HOSPITALS, 1947.

Hospital	Number of Patients			Number of In-Patient Units		
	European	Coloured and Natives	Total	European	Coloured and Natives	Total
Salisbury	442	7,747	8,189	9,910	95,668	105,578
Bulawayo	850	8,648	9,498	7,881	105,457	113,338
Bindura	22	1,600	1,622	290	17,925	18,215
Enkeldoorn	40	1,394	1,434	372	22,691	23,063
Fort Victoria ..	68	1,417	1,485	432	17,337	17,769
Gatooma	130	3,752	3,882	813	50,808	51,621
Gwanda	12	1,544	1,556	344	30,349	30,693
Gwelo	148	3,563	3,711	1,381	32,908	34,289
Marandellas	6	—	6	35	—	35
Que Que	16	1,433	1,449	216	47,046	47,262
Rusapi	30	1,169	1,199	210	32,139	32,349
Selukwe	50	—	50	607	—	607
Shamva	5	1,419	1,424	40	12,477	12,517
Sinoia	27	1,515	1,542	235	18,181	18,416
Umtali	107	2,827	2,934	876	42,584	43,460
TOTAL ..	1,953	38,028	39,981	23,642	525,570	549,212
Ingutsheni	136	743	879	29,267	170,041	199,308
Nervous Disorders ..	108	—	108	1,420	—	1,420
GRAND TOTAL	2,197	38,771	40,968	54,329	695,611	749,940

STAFFING, BEDS AND PATIENTS OF GOVERNMENT HOSPITALS (EXCLUDING VENEREAL DISEASE), 1947.

TABLE G.

Hospital	Nursing Staff		Number of Beds (b)		Number of In-patients		(a)	Daily Average of In-patients			Number of In-patient Units Maintained			Average Stay in Hospital in Days	
	E.	N.	E.	C. & N.	E.	C. & N.	Total	E.	C. & N.	Total	E.	C. & N.	Total	E.	C. & N.
Salisbury	87	25	181	253	3,252	8,021	11,273	126·5	282·7	408·2	46,195	103,212	149,407	14·2	12·8
Bulawayo	97	55	193	330	4,421	9,555	13,976	140·3	324·5	464·8	51,200	118,463	169,663	11·6	12·4
Bindura	6	10	11	25	255	1,667	1,922	5·7	50·8	56·5	2,090	18,556	20,646	8·2	11·1
Enkeldoorn	5	11	12	44	177	1,439	1,616	2·5	62·8	65·3	929	22,931	23,860	5·2	15·9
Fort Victoria ..	6	14	22	36	380	1,458	1,838	7·3	49·0	56·3	2,674	17,884	20,558	7·0	12·3
Gatooma	15	26	39	120	1,019	4,140	5,159	20·0	153·6	173·6	7,266	56,088	63,354	7·1	13·5
Gwanda	5	8	6	85	149	1,822	1,971	3·9	96·3	100·2	1,424	35,168	36,592	9·5	19·3
Gwelo	15	16	56	64	858	2,749	3,607	23·0	95·0	118·0	8,413	34,698	43,111	9·8	12·6
Marandellas	3	3	7	—	41	—	41	3·2	—	3·2	199	—	199	4·8	—
Que Que	8	15	12	26	493	1,838	2,331	6·9	143·9	150·8	2,519	52,553	55,072	5·1	28·6
Rusapi	1	11	8	20	287	1,217	1,504	4·9	88·0	92·9	1,789	32,139	33,928	6·2	26·4
Selukwe	5	3	10	—	295	—	295	6·6	—	6·6	2,411	—	2,411	8·2	—
Shamva	3	7	6	36	10	1,102	1,112	0·1	37·0	37·1	47	13,519	13,566	4·7	12·3
Sinoia	6	13	10	60	276	1,594	1,870	5·7	59·1	64·8	2,074	21,567	23,641	7·5	13·5
Umtali	17	18	38	65	1,131	4,619	5,750	27·2	194·0	221·2	9,937	70,837	80,774	8·8	15·3
TOTAL ..	283	235	611	1,164	13,044	41,221	54,265	381·1	1637·3	2018·4	139,167	597,615	736,782	10·7	14·5
Ingutsheni	44	72	128	579	244	821	1,065	130·5	539·9	670·4	47,652	197,065	244,717	195·3	240·0
Nervous Disorders	6	—	23	—	260	—	260	13·6	—	13·6	4,955	—	4,955	19·0	—
GRAND TOTAL	333	307	762	1,743	13,548	42,042	55,590	525·3	2177·2	2702·5	191,774	794,680	986,454	14·1	18·9

(a) Includes patients in hospital on 1st January, 1947.
(b) The figures this year are for nominal beds and do not include extra beds temporarily in use.

ADMISSIONS TO GOVERNMENT HOSPITALS, 1947, OF CASES OF MALARIA, BLACKWATER FEVER, DYSENTERY, PNEUMONIA, TYPHOID FEVER AND SCURVY.

Hospital	Malaria				Blackwater Fever				Dysentery				Pneumonia				Typhoid Fever				Scurvy			
	European		Col. & Native		European		Col. & Native		European		Col. & Native		European		Col. & Native		European		Col. & Native		European		Col. & Native	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Salisbury	134	3	246	4	1	—	—	—	56	2	67	14	106	11	641	108	10	—	11	—	—	—	8	—
Bulawayo	152	1	178	1	1	—	—	—	178	—	123	5	122	2	614	59	13	1	24	3	1	—	34	—
Bindura	102	—	88	9	—	—	—	—	3	—	7	1	5	—	55	13	2	—	1	1	—	—	—	—
Enkeldoorn	20	—	75	2	—	—	—	—	4	—	9	1	8	—	40	10	—	—	—	—	—	—	—	—
Fort Victoria	128	3	186	9	—	—	—	—	10	—	8	2	17	—	48	11	1	—	—	—	—	—	4	—
Gatooma	173	—	397	8	—	—	—	—	33	1	101	13	10	—	266	46	3	—	2	—	—	—	124	1
Gwanda	4	—	13	—	—	—	—	—	2	—	18	—	3	—	48	2	2	—	4	1	—	—	10	—
Gwelo	65	1	134	2	—	—	—	—	32	—	60	2	31	3	155	21	—	—	6	1	—	—	7	—
Marandellas	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Que Que	30	—	48	3	—	—	—	—	12	—	6	3	16	—	67	19	—	—	4	—	—	—	—	—
Rusapi	50	—	48	1	—	—	—	—	10	—	27	—	14	—	104	11	1	—	1	—	—	—	—	—
Selukwe	25	1	—	—	—	—	—	—	4	—	—	—	21	1	—	—	—	—	—	—	—	—	—	—
Shamva	6	—	84	8	—	—	—	—	—	—	4	3	—	—	50	5	—	—	—	—	—	—	—	—
Sinoia	57	—	92	—	—	—	—	—	11	—	13	—	26	—	113	10	2	—	4	2	—	—	30	1
Umtali	94	—	175	9	—	—	—	—	10	—	5	1	19	3	115	21	—	—	2	1	—	—	—	—
TOTAL	1,040	9	1,754	56	2	—	—	—	365	3	448	45	398	20	2,316	336	34	1	59	9	1	—	217	2

C. = Cases. D. = Deaths.

Mission	Admissions			In-patient Units			Deaths			Out-patients			Out-patient Treatments		
	V.D.	Other	Total	V.D.	Other	Total	V.D.	Other	Total	V.D.	Other	Total	V.D.	Other	Total
All Saints', Mrewa	585	5,265	5,850	3,084	9,975	13,059	2	25	27	342	5,309	5,651	4,975	53,586	58,561
American Board ..	39	1,083	1,122	1,419	14,384	15,803	—	26	26	46	2,563	2,609	690	4,619	5,309
Bonda	498	1,869	2,367	6,361	18,768	25,129	—	—	—	177	2,934	3,111	3,341	13,969	17,310
Chikore	3	505	508	16	4,952	4,968	—	7	7	—	2,109	2,109	—	3,967	3,967
Chishawasha ..	—	255	255	—	2,729	2,729	—	1	1	34	6,474	6,508	179	8,886	9,065
Driefontein	12	450	462	35	3,828	3,863	—	2	2	15	1,921	1,936	75	9,605	9,680
Empandeni	3	338	341	29	3,832	3,861	—	—	—	86	23,970	24,056	968	33,646	34,614
Epworth	—	—	—	—	—	—	—	—	—	—	1,490	1,490	—	11,656	11,656
Gokomere	—	62	62	—	645	645	—	2	2	609	18,500	19,109	1,913	38,200	40,113
Gutu	—	1,536	1,536	—	3,419	3,419	—	9	9	743	16,840	17,583	1,119	25,748	26,867
Howard	—	630	630	—	5,625	5,625	—	4	4	8	4,406	4,414	8	12,924	12,932
Lower Gwelo ..	62	457	519	328	3,540	3,868	3	10	13	1,045	2,656	3,701	5,930	4,208	10,138
Lundi	—	—	—	—	—	—	—	—	—	—	1,000	1,000	—	3,866	3,866
Manana	560	120	680	15,976	2,160	18,136	—	—	3	93	162	255	991	1,890	2,881
Masase	1,611	296	1,907	41,846	11,078	52,924	—	11	11	226	438	664	2,991	2,389	5,380
Matopo	98	209	307	611	1,174	1,785	—	—	—	394	2,621	3,015	786	12,495	13,281
Mnene	2,104	1,868	3,972	56,443	49,882	106,325	—	69	69	180	811	991	1,847	3,007	4,854
Morgenster	90	1,727	1,817	4,243	17,906	22,149	—	79	79	856	8,325	9,181	7,246	48,239	55,485
Mtshabesi	148	640	788	2,950	10,364	13,314	—	6	6	26	2,445	2,471	193	20,842	21,035
Mutambara	61	196	257	1,180	2,113	3,293	1	1	2	569	1,943	2,512	3,576	6,120	9,696
Nyaderi	68	2,223	2,291	752	26,409	27,161	7	34	41	87	2,226	2,313	999	8,955	9,954
Old Umtali	30	619	649	734	8,672	9,406	—	6	6	571	1,189	1,760	4,844	5,288	10,132
Rusitu	8	243	251	37	1,632	1,669	—	1	1	24	1,482	1,506	68	6,850	6,918
St. Barbara's ..	86	879	965	694	5,234	5,928	4	11	15	264	5,136	5,400	3,982	13,499	17,481
St. Faith's	—	14	14	—	58	58	—	—	—	—	6,216	6,216	—	7,314	7,314
St. Joseph's	—	—	—	—	—	—	—	—	—	226	11,960	12,186	2,660	18,600	21,260
St. Paul's	18	238	256	198	2,008	2,206	2	10	12	112	9,231	9,343	798	20,464	21,262
St. Patrick's ..	—	10	10	—	38	38	—	1	1	146	871	1,017	837	3,220	4,057
Silviera	79	840	919	684	4,922	5,606	3	3	6	308	5,770	6,078	1,005	20,907	21,912
Solusi	—	63	63	—	431	431	8	3	11	871	955	1,826	3,484	5,730	9,214
Triashill	184	1,295	1,479	3,904	14,338	18,242	3	17	20	67	8,183	8,250	373	24,542	24,915
Waddilove	—	491	491	—	4,130	4,130	—	7	7	2	4,836	4,838	20	11,860	11,880
Zambesi	—	—	—	—	—	—	—	—	—	—	2,000	2,000	—	4,874	4,874
TOTAL (33)	6,347	24,421	30,768	141,524	234,246	375,770	33	345	378	8,157	166,973	175,130	55,901	471,965	527,866

Name of Home	Town	Patients remaining 1/1/47	Admitted	Died	Patients remaining 31/12/47	Confinements	Births		Deaths of Infants	Miscarriages and Abortions	Operations		Equipped Beds
							Live	Still			Major	Minor	
Lady Chancellor	Salisbury	23	967	1	23	916	900	16	14	1	43	319	37
Lady Rodwell	Bulawayo	19	700	1	15	620	614	8	15	2	13	232	29
Birchenough	Gwelo	4	151	1	3	138	135	3	2	—	—	6	9
Umtali	Umtali	7	217	3	10	176	175	5	4	1	9	60	10
Fort Victoria	Fort Victoria ..	—	52	—	—	38	38	—	—	—	1	8	6
Appelby	Bindura	—	59	—	—	53	49	3	1	—	2	—	3
Que Que	Que Que	2	64	—	3	57	56	2	—	—	—	2	3
Enkeldoorn	Enkeldoorn ..	—	14	—	—	14	14	—	1	—	—	—	5
Donaldson	Selukwe	—	53	—	4	51	49	2	1	—	—	—	5
Sinoia	Sinoia	1	43	—	2	38	38	3	3	—	—	—	2
Total Government operated Homes (10)	.. .. ..	56	2,320	6	60	2,101	2,068	42	41	4	68	627	109
Clarison	Bulawayo	6	87	—	1	93	91	2	—	—	—	—	7
Ardbennie (*a*)	Salisbury	2	84	—	—	84	82	2	1	—	—	—	10
Queen Mary	Gatooma	6	97	—	3	100	102	1	4	—	—	—	7
Total privately operated Homes (3)	.. .. ..	14	268	—	4	277	275	5	5	—	—	—	24
GRAND TOTAL (13) ..	.. .. ..	70	2,588	6	64	2,378	2,343	47	46	4	68	627	133

(*a*) Closed down on 31st October, 1947.

EUROPEAN SCHOOLS—1947 (Combined Summary)	Children Born in						Total	Per cent.
	Group 1 Entrants 1940	Group 2, 1938	Group 3, 1936	Group 4, 1934	Group 5, 1932	Group 6, 1930		
Number Examined	1,764	1,607	1,462	1,835	813	125	7,606	—
Number Examined for Nutrition: A	204	314	427	704	498	90	2,237	29·4
B	1,213	1,020	831	990	290	34	4,378	57·6
C	329	260	187	138	24	1	939	12·3
D	18	13	17	3	1	0	52	0·7
Skin Diseases	71	60	45	70	33	6	285	3·7
Defective Vision:								
(1) Requiring Treatment	23	44	5	80	33	5	190	2·5
(2) For observation	144	125	81	100	34	6	490	6·4
(3) Treatment obtained	28	37	62	94	68	15	304	0·4
Squint	17	11	8	6	1	0	43	0·6
Other eye conditions	41	32	27	19	4	0	123	1·6
Defective Hearing:								
(1) History of Otitis Media	6	9	16	16	6	2	55	0·7
(2) Adenoids	2	0	1	0	0	0	3	0·04
(3) Other causes	8	6	8	10	3	1	36	0·5
Active Otitis Media	10	10	10	7	2	0	39	0·5
Tonsils and Adenoids:								
(1) Enlarged	113	92	71	80	29	2	387	5·1
(2) Removal advised	14	9	9	10	2	0	44	0·6
(3) Removed previously	489	588	573	759	340	49	2,798	36·8
Teeth	116	131	121	192	120	16	696	9·2
Heart:								
Organic Disease:								
(1) Rheumatic	0	3	5	4	3	3	18	0·2
(2) Other causes	5	0	8	6	4	0	23	0·3
Functional disease:								
(1) Murmurs	7	6	5	8	1	0	27	0·3
(2) Other conditions	4	3	7	10	6	1	31	0·4
Lungs:								
(1) Bronchitis	45	11	10	12	0	0	78	1·02
(2) Asthma	5	8	5	3	3	0	24	0·3
Postural Defects:								
Spinal	370	309	305	287	64	7	1,342	17·6
Flat feet	225	266	320	352	120	17	1,300	17·1
Deformities:								
Knock knees	52	48	36	53	16	3	208	2·7
Other deformities	20	19	22	33	14	6	114	1·5
Enlarged Spleen	3	5	11	11	3	1	34	0·45
Nervous Diseases	7	5	6	9	5	1	33	0·41
Nervous Disorders	18	20	11	11	0	0	60	0·8
Speech	13	7	5	8	1	1	35	0·46
Other Conditions	88	95	88	76	36	3	386	5·1

COLOURED, INDIAN AND AFRICAN SCHOOLS, 1947 (Combined Summary)	Coloured and Indian Children Born in						Total	Per cent.	African Children of all Ages Examined
	Group 1 Entrants 1940	Group 2, 1938	Group 3, 1936	Group 4, 1934	Group 5, 1932	Group 6, 1930			
Number Examined	271	283	253	326	178	29	1,340	—	416
Number Examined for Nutrition: A	8	14	36	86	67	5	216	16·1	45
B	151	182	141	191	94	23	782	58·4	303
C	91	75	68	44	15	1	294	21·9	35
D	21	12	8	5	2	0	48	3·6	35
Skin Diseases	13	16	11	12	7	2	61	4·5	33
Defective Vision:									
(1) Requiring Treatment	1	4	4	8	10	1	28	2·1	4
(2) For observation	17	14	11	11	1	1	55	4·1	6
(3) Treatment obtained	0	1	0	7	2	0	10	0·75	4
Squint	2	5	4	2	2	0	15	1·1	1
Other eye conditions	3	6	6	5	1	3	24	1·8	4
Defective Hearing:									
(1) History of Otitis Media	0	0	0	0	4	0	4	0·3	1
(2) Other causes	2	2	1	2	1	0	8	0·6	0
Active Otitis Media	0	3	1	2	0	0	6	0·45	0
Tonsils and Adenoids:									
(1) Enlarged	19	18	17	15	8	2	79	5·9	0
(2) Removal advised	2	1	4	3	0	0	10	0·75	0
(3) Removed previously	7	15	26	26	12	1	87	6·5	0
Teeth	23	19	22	33	26	3	126	9·4	54
Heart:									
Organic Disease:									
(1) Rheumatic	0	1	2	0	0	0	3	0·2	—
(2) Other causes	3	3	2	3	1	0	12	0·9	—
Functional Disease:									
(1) Murmurs	3	3	3	2	2	0	13	0·97	7
(2) Other conditions	2	0	1	5	1	0	9	0·7	3
Lungs:									
(1) Bronchitis	1	2	0	1	0	0	4	0·3	0
(2) Asthma	0	1	0	0	0	0	1	0·07	0
Postural Defects:									
Spinal	43	59	64	58	16	2	242	18·0	12
Flat Feet	12	30	37	65	29	4	177	13·2	10
Deformities:									
Knock Knees	7	7	8	10	9	0	41	3·05	9
Other deformities	4	4	3	2	3	1	17	1·3	
Enlarged Spleen	8	5	3	8	2	1	27	2·0	3
Nervous Diseases	0	0	0	1	0	0	1	0·07	2
Nervous Disorders	2	2	0	1	0	0	5	0·4	0
Speech	0	0	0	2	0	0	2	0·15	0
Other Conditions	4	6	12	10	4	1	37	2·8	280

REPORT OF THE PUBLIC HEALTH LABORATORY, SALISBURY.

I.—BACTERIOLOGY.

	Racial Distribution. Europeans.	Non-Europeans.
Sputa—		
Total examined 1,729	690	1,039
With the following findings:—		
M. tuberculosis	160	181
Friedlander's bacillus	2	—
Staphylococcus albus	1	—
Staphylococcus aureus	3	—
Haemolytic streptococci	3	—
Strep. pneumoniae	1	—
Other organisms	1	—
Urines—		
Total Cultures 793	663	130
Positive findings were as follows:—		
B. coli	148	14
Staphylococci	77	21
Staphylococcus albus	2	4
Streptococci	4	—
Gonococcus	1	—
B. proteus	12	2
Ps. pyocyaneus	10	—
B. typhosum	2	—
M. catarrhalis	1	—
Lactose fermenting organisms	28	7
Other organisms	32	2
Faeces—		
Total Cultures 394	252	142
Positive findings were as follows:—		
Atypical *B. dysenteriae*	10	2
B. dysenteriae Flexner	—	1
Ps. pyocyaneus	1	1
B. typhosum	2	—
B. proteus	1	—
E. coli cysts	—	1
Coliform organisms	—	1
Lactose fermenting organisms	6	2
Bact. faecalis alkaligenes	—	1
Gram-negative (Morgan's?) bacillus	—	1
Blood—		
Total Cultures 200	82	118
Positive findings were as follows:—		
Staphylococcus albus	8	1
Staphylococcus aureus	2	20
Streptococcus	1	1
Non-haemolytic streptococci	1	2
Strep. pneumoniae	1	—
B. typhosum	1	6
M. catarrhalis	1	1
B. faecalis alkaligenes	1	4
B. coli	—	4
Gram negative diplococci	1	4
Lactose fermenting organisms	1	5
Other organisms	6	5
Actinomycosis	—	1

	Racial Distribution. Europeans.	Non-Europeans.
THROAT AND NASAL SWABS—		
Total Cultures 1,212	818	394
Positive findings were as follows:—		
C. diphtheriae	30	24
Staphylococcus albus	19	10
Staphylococcus aureus	1	—
Haemolytic streptococci	28	10
Strep. pneumoniae	4	2
M. catarrhalis	1	—
Friedlander's bacillus	1	—
Spirilla fusiform bacillus	1	—
MOUTH SWABS—		
Total examined 8	2	6
Positive findings were as follows:—		
Staphylococcus	1	2
Diphtheroids	1	3
Vincent's organisms	—	1
SMEARS—		
Total examined 1,444	430	1,014
(a) Urethral Smears totalled 491	230	261
Positive findings being as follows:—		
Gonococcus	53	46
Trichomonas vaginalis	3	—
Trichomonas hominis	—	1
T. pallida	3	5
(b) Vaginal Smears totalled 546	89	457
Positive findings being as follows:—		
Gonococcus	3	15
Trichomonas vaginalis	5	21
(c) Cervical Smears totalled 388	101	287
Positive findings being as follows:—		
Gonococcus	2	3
Trichomonas vaginalis	5	24
Staphylococcus	2	—
Doderleins bacillus	—	1
(d) Conjunctival Smears totalled 19	10	9
Positive findings being as follows:—		
Gonococcus	4	—
Staphylococcus albus	3	—
Diphtheroids	1	2
LEPROTIC MATERIAL—		
Total examined 94	1	93
Positive *M. leprae*	—	30
CEREBRO-SPINAL FLUID—		
Totalled 148	26	122
Positive findings being as follows:—		
Meningococcus	1	2
Staphylococcus aureus	—	8
Staphylococcus albus	—	1
Strep. pneumoniae	1	7
B. proteus	—	1
Diphtheroids	1	—
Other organisms	3	2

WATER EXAMINATIONS—

Totalled 226.

MILK EXAMINATIONS—

Totalled 19.

Methylene Blue Reductase Tests 18 (European). Human Milk for culture: *Staphylococcus albus*: 1.

VACCINES—

Total Autogenous Vaccines prepared, 14.

II.—PARASITOLOGY.

	Racial Distribution. Europeans.	Non-Europeans.
Blood—		
A total of 5,202 smears were examined	2,527	2,675
The following positives were obtained :—		
P. falciparum	376	207
P. malariae	6	1
P. vivax	—	3
Trypanosomes	—	5
Spirochaetes of Relapsing Fever	—	12
Urines—		
Examinations totalled 6,822	2,714	4,108
With the following results :—		
S. haematobium	48	895
A. duodenale	—	1
Faeces—		
A total of 10,279 were examined	3,768	6,511
(a) *Protozoa—*		
Giardia lamblia	68	21
E. histolytica	11	9
C. mesnili	1	—
Trichomonas intestinalis	4	—
Balantidium coli	—	7
Trophozoites of *E. coli*	2	—
(b) *Helminths—*		
Enterobius vermicularis	26	6
Taenia spp.	10	96
Trichuris trichiura	18	14
S. mansoni	37	514
Ascaris lumbricoides	12	44
A. duodenale	24	961
Hymenolepis nana	4	16
Strongyloides stercoralis	—	4
S. haematobium	—	8
S. mattheei	1	—
S. bovis	2	—
Charcot Leyden crystals	5	5

III.—HAEMATOLOGY.

Examinations—		
Totalled 7,466	5,474	1,992
Blood Cytology	5	1
Red Cell Fragility	9	—
Total red cell counts	1,305	564
Total white cell counts	1,958	811
Total differential white cell counts	845	49
Haemoglobin estimations	819	89
Eosinophile counts	135	8
Reticulocyte counts	41	—
Platelet counts	17	68
Coagulation time	9	38
Bleeding time	9	41
Prothrombin time	41	41
Blood sedimentation rates	281	136
Sickle cell trait	—	1

IV.—SEROLOGY.

Wassermann Reactions—		
Totalled 16,858	893	15,965
Positive reactions totalled 3,116	97	3,019
Negative reactions totalled 13,742	796	12,946

	Racial Distribution. Europeans.	Non-Europeans.
AGGLUTINATION REACTIONS—		
Totalled 2,005	1,098	907
Widal Reactions	237	455
Br. abortus	136	53
Weil Felix	11	2
Paul Bunnel tests	8	3
Vi. agglutinations	4	129
Blood Groupings	330	265
Compatibility tests	363	—
Rh. Factor	10	—

V.—BIOCHEMISTRY.

BLOOD—		
Total examined 632	368	264
Glucose Tolerance Test	57	2
Blood Sugar	153	22
Blood Urea	117	149
Van den Bergh reaction	8	18
Icterus Index	10	21
Serum Calcium	10	25
Serum Phosphorous	1	3
Serum Chloride	3	—
Serum Protein	1	20
Bilirubin	1	2
Blood Cholesterol	2	1
Blood Uric Acid	3	1
Alkali Reserve	2	—
STOMACH CONTENT—		
Fractional Test Meals totalled 156	150	6
FAECES—		
Total examined 143	133	10
Occult Blood	131	10
Gmelin's test for bile	2	—
URINES—		
Total examined 11,468	4,591	6,877
Routine chemical examinations	2,046	3,228
Routine microscopic examinations	2,500	3,633
Diastatic Index	5	2
Spectroscopic examinations	6	—
Urea clearance	5	—
Bence Jones Proteose	3	3
Blood	1	—
Glucose quantitative estimation	1	—
Sugar identification	3	2
Biliuria	8	6
Acetone	4	—
Tanret reaction	—	1
CEREBRO-SPINAL FLUID—		
Examinations totalled 474	157	317

VI.—MISCELLANEOUS.

BIOLOGICAL TESTS—		
Totalled 130	118	12
Biological tests for *M. tuberculosis*	7	2
Friedman tests	111	10
BASAL METABOLIC RATES—		
Total number done during the year 7	7	—
FUNGAL EXAMINATIONS—		
Totalled 11	11	—
Positive findings were as follows:—		
Microsporon audouini	1	—
Spores and mycelia of *Trichophyton Megalosporon*	1	—

	Racial Distribution. Europeans.	Non-Europeans.
SKIN TESTS—		
These total 48	48	—
Inhalants	29	—
Ingestants	19	—
OTHER EXAMINATIONS—		
Totalled 388	115	273
These included—		
Abdominal, pleural, seminal, ascitic, chest and knee fluids, skin tissue, smears, swabs, scrapings, pus, worms, and marrow-bone.		
Penicillin sensitivity tests.		
POST-MORTEM EXAMINATIONS—		
Totalled 672.		

VII.—HISTOLOGY.

Total examined 1,747	764	983
Routine Surgical	702	85
Post-mortem tissue	50	801
Phthisis Bureau specimens	12	97
TOTAL EXAMINATIONS	25,900	43,958

GRAND TOTAL OF EXAMINATIONS FOR THE YEAR 1947 : 70,789.

UMTALI LABORATORY.

I.—BACTERIOLOGY.

SPUTA—		
Total examined 149	32	117
Positive findings—		
M. tuberculosis	3	12
URINES—		
Total cultures 60	28	32
Positive findings—		
Staphylococci	2	3
B. coli	2	—
FAECES—		
Total cultures 46	8	38
Positive findings—		
B. typhosum	—	1
BLOOD—		
Total cultures 2	1	1
THROAT SWABS—		
Total cultures 146	68	78
Positive findings—		
Streptococci	4	5
C. diphtheriae	2	6
Vincent's angina	—	3
SMEARS—		
Total examined 578	43	535
Positive findings—		
Gonococci	6	30
Myco. leprae	—	11
CEREBRO-SPINAL FLUID—		
Total examined 55	12	43
Positive findings—		
Pneumococci	—	2
Meningococci	1	3

II.—PARASITOLOGY.

	Racial Distribution. Europeans.	Non-Europeans.
BLOOD—		
A total of 1,480 smears was examined	483	997
The following positives were obtained—		
P. falciparum	68	172
URINES—		
Total microscopic examinations 3,139	166	2,973
Positive findings were—		
S. haematobium	8	529
FAECES—		
Total microscopic examinations 3,440	455	2,985
Positive findings obtained	19	462

III.—HAEMATOLOGY.

Examinations totalled 515	367	148
Complete blood counts	127	76
Red cell counts and haemoglobin estimations	58	21
White cell counts and differential counts	121	45
Differential white cell counts	60	6
Bleeding time	1	—

IV.—SEROLOGY.

AGGLUTINATION REACTIONS—		
Totalled 204	61	143
Widal Reactions, Salmonella Group	18	37
Br. abortus	2	2
Blood groupings and compatibility	41	104

V.—BIOCHEMISTRY.

Total Biochemical examinations 1,502	265	1,237
BLOOD—		
Blood sedimentation rates	52	58
Van den Bergh reactions	2	—
STOMACH CONTENTS—		
Fractional test meals totalled 18	17	1
FAECES—		
Occult blood	2	—
URINES—		
S.G. Reactions, Albumen, Sugar and Bile	192	1,178

VI.—MISCELLANEOUS.

Examinations totalled 32 and included examinations of:—		
Pus	7	13
Fluids from—		
Pleural cavity	1	2
Knee	—	1
Blister	—	3
Abscess	1	1
Ulcer	—	1
Sinus	—	1
Pericardium	—	1
TOTAL EXAMINATIONS	1,998	9,350

GRAND TOTAL OF EXAMINATIONS FOR THE YEAR 1947: 11,348.

E. MASON BARKER, M.B., CH.B., D.C.P.,
Director.

REPORT OF THE PUBLIC HEALTH LABORATORY, BULAWAYO.

During the year 1947 a total of 68,802 specimens were examined at the Public Health Laboratory, Bulawayo. Of these 22,894 were European and 37,908 were African.

I.—BACTERIOLOGY.

	European.	African.
Sputum	423	1,417
Positive—		
Myco. tuberculosis	97	203
Urine	1,126	107
Positive—		
Bact. coli	275	17
Bact. faecalis alkaligenes	4	1
Bact. typhosum	3	4
Streptococci	2	—
Staphylococci	87	2
Friedlanders bacilli	6	—
Bact. pyocyaneus	3	—
Faeces	625	384
Positive—		
Bact. typhosum	1	2
Bact. dysenteriae Flexner	8	1
Bact. dysenteriae Sonne	8	1
Bact. dysenteriae Schmitz	1	—
Blood	90	107
Positive—		
Bact. typhosum	12	5
Bact. pyocyaneus	—	1
Nasal and Throat Swabs	612	330
Positive—		
C. diphtheriae	51	21
Vincents organisms	4	6
Haemolytic Streptococci	20	3
Skin Snips	27	24
Positive—		
Myco. leprae	—	1
Urethral Smears	91	174
Positive—		
N. gonorrhoeae	33	74
Dark Field Examinations	3	—
Positive—		
S. pallida	3	—
Conjunctival Smears	37	167
Positive—		
Staphylococcus aureus	2	—
Cerebro-Spinal Fluid	104	213
Positive—		
N. meningitiditis	1	4
Pneumonococci	—	7

II.—PARASITOLOGY.

Blood	1,066	1,607
Positive—		
P. falciparum	118	101
P. vivax	13	7
S. duttoni	—	70
Trypanosomes	—	2
Urine	3,252	6,010
Positive—		
S. haematobium	28	774

	European.	African.
FAECES	2,724	3,039
Positive—		
S. mansoni	1	49
E. histoloytica	180	117
Hookworm	1	135
Taenia spp.	3	39
A. lumbricoides	3	12
T. trichiura	5	2
Giardia lamblia	55	13
O. vermicularis	1	7
Strongyloides stercoralis	1	2

III.—HAEMATOLOGY.

Total examinations	2,561	740
Red blood cell counts	1,737	225
White blood cell counts	1,824	600
Differential white cell counts	1,993	619
Bone marrow	4	—
Haemaglobin estimations	1,622	244
Blood sedimentation rates	161	61
Blood Groups	141	49
Clotting times	46	2
Bleeding times	24	1
Prothrombin times	—	1
Reticulocyte counts	4	—
Platelet counts	9	1
Fragility tests	10	—

IV.—SEROLOGY.

WASSERMANN REACTION	42	700
Positive	3	166
Doubtful positive	2	20
KAHN REACTION	622	15,038
Positive	62	4,800
Doubtful positive	14	678
AGGLUTINATION REACTIONS	261	901
Positive—		
Widal	33	64
Vi	19	3
Weil Felix	4	1
Cold agglutination	2	—
B. abortus	7	—
B. melitensis	11	—
Paul Bunnell	6	—

V.—BIOCHEMISTRY.

BLOOD	335	97
For Sugar	107	2
Sugar Tolerance	48	—
Urea	102	85
N.P.N.	37	3
Calcium	4	1
Cholesterol	8	2
Van den Bergh	8	—
Serum protein	3	1
Bilirubin	5	—
Icterus Index	6	2
Chlorides	3	1
Thiocyanate	4	—
URINE—		
Routine examinations	1,742	4,532
Urea concentration	9	—
FAECES	44	1
Occult Blood	28	1
CEREBRO-SPINAL FLUID	86	189
FRACTIONAL MEALS	53	1

VI.—HISTOLOGY.

	European.	African.
Total specimens examined	361	417

VII.—MISCELLANEOUS.

Sterility and sperm tests		17	—
Pleural fluids, liver abscesses, etc.		316	251
Autogenous vaccines		13	—
Bacteriological examination of water	252		
Methylene Blue Reductase tests	807		
Medico-legal tests	20		
Post-mortem	7		
Miscellaneous examinations	46		
Asthma Skin tests		13	—
Bilharzia Skin tests		93	—

PUBLIC HEALTH LABORATORY, GWELO.

During the year 1947 a total of 15,624 specimens were examined at the Public Health Laboratory, Gwelo. Of these 12,471 were African and 3,153 were European.

I.—BACTERIOLOGY.

Sputum	41	505
Positive—		
Myco. tuberculosis	8	43
Urine	126	8
Faeces	43	6
Nasal and Throat Swabs	60	223
Positive—		
C. diphtheriae	1	10
Urethral Smears	31	123
Positive—		
N. gonorrhoeae	5	18
Cerebro-Spinal Fluid	6	12
Examinations for Leprosy	—	11
Positive—		
Myco. leprae	—	3

II.—PARASITOLOGY.

Blood	198	157
Positive Malaria	15	12
Urine	632	2,987
Positive—		
S. haematobium	17	541
Faeces	399	2,299
Positive—		
S. mansoni	—	30
E. histolytica	15	19
Other worms	12	50

III.—HAEMATOLOGY.

Total examinations	317	98
Red blood cell counts	219	53
White blood cell counts	219	53
Haemaglobin estimations	214	51
Differential white cell counts	313	86
Blood sedimentation rates	—	9
Blood groups	3	2
Platelet counts	1	—

IV.—SEROLOGY.

	European.	African.
Kahn Reaction	63	2,953
Positive	3	1,002
Doubtful positive	—	108
Agglutination Reactions	41	83
Positive—		
Widal	3	5

V.—BIOCHEMISTRY.

Blood	41	9
Sugar tolerance	3	—
Urea	22	9
For sugar	10	—
Van den Bergh	6	—
Urine—		
Routine examinations	437	2,760
Faeces	3	3
Occult Blood	1	2
Fractional Test Meals	10	—

VI.—MISCELLANEOUS.

Pleural Fluids, joint exudates, etc.	51	62

B. TULLOCH, M.B., CH.B.,
Director, Public Health Laboratory, Bulawayo.

Appendix P.

ANNUAL REPORT OF THE GOVERNMENT ANALYST, 1947.

Numerical Summary and Analysis of Work Done.

Total Number of Samples and Exhibits dealt with: 2,258.

They comprised:—

Exhibits in connection with Criminal Investigation—

Exhibits for Presence of Poisons	492	
Exhibits for Presence of Blood Stains	60	
Exhibits for Presence of Seminal Stains	86	
Miscellaneous Forensic Exhibits	57	
	——	695

Samples of Water—

General Analysis of Private Well, Borehole, Mineshaft and River Supplies for Hygiene and Utility Purposes	54
General Analysis of Town Supplies	22
General Analysis of Supplies to Government Establishments, Schools, Hospitals, Police and Farmers	17
General Analysis for Purification Control and Treatment of Waters for Community Supplies	12
General Analysis of Corrosive-Ferruginous Borehole and Well Waters	13
Analysis of Hotel Supplies in connection with the Liquor Licensing Board	7
Analysis of Waters intended for Railway Locomotive and Industrial Boiler Use	19
Special Study of Purity of Supplies for Mineral Water and Foodstuffs Manufacture	8
Special Study of Purification and Sterilisation Processes	6

Special Study of Supplies from Rivers, Mineshafts, Boreholes and Wells suspected of being injuriously contaminated	16	
Special Study of Mineral and Hot-Spring Waters	4	
Special Study of Suspended Matter at Levels in a Dam	4	
Special Study of Unusual Waters in Well and Borehole Drillings	2	
Swimming Bath Water Control	11	
Special Study of Purity of Distilled Water	3	
		198
Cows' Milk—		
Official Samples for Analysis for Conformity to Standards	170	
Routine Samples Taken for Control Analysis	22	
Samples for Phosphatase Test for Pasteurisation Control	62	
		254
Samples of Dairy Produce—		
Butter, Cheese and Ice-Cream		40
Customs Control—		
Excise Samples of Wines and Spirits	34	
Miscellaneous Substances for Tariff Classification	33	
		67
Samples of Brandy and Spirit for Alcohol Content		13
Skokiaan Samples (General Native Fermented Liquors)		721
Native Distilled Spirits and Illicit Intoxicants		24
Kaffir Beer Samples from Location Beer Halls		3
Clinical—		
Human Milk Specimens	3	
Various Specimens from Public Health Laboratories	96	
		99
Drugs Examined for Medical Store		37
Maize Meal Samples		40
Foodstuff Samples—		
Imported tinned foods examined for condition	11	
Fruit and Cordials examined for contamination	3	
Locally produced foodstuffs examined for quality and advice on methods of manufacture	12	
		26
Miscellaneous Samples		41
Total		2,258

The total number of samples analysed—2,258—shows a small increase of 100 samples over the corresponding figure for 1946.

Criminal Investigations.

As has invariably been the case in past years, exhibits in connection with criminal investigations represent the major portion of the work performed during 1947. In addition to the 695 samples listed under this heading there were 745 samples of liquor seized by the Police and submitted to us for analysis.

There were 116 cases for toxicological investigation, involving 492 exhibits.

This work is often very exacting, and makes big demands on the analyst's skill and time. It therefore behoves every medical officer and police official who submits exhibits for analysis to ensure that they are properly packed and labelled, and, in the case of viscera, properly preserved. Post-mortem specimens sent for analysis should be packed separately. It is a mistake to cram stomach, liver, kidney, intestines, etc., into one large jar, often with too little preservative, for quantitative analysis is thereby rendered meaningless and such action might endanger the possibilities of furnishing conclusive evidence in an important murder trial.

Arsenic again easily heads the list of poisons found, about 50% of all the positive cases and exhibits involving this poison. Its use is widespread on farms and elsewhere, in the shape of cattle dips and locust poisons, and some farmers cannot appreciate the necessity for taking the strictest precautions with it. Too often there have been tragic accidents, which might have been avoided if there had been closer supervision of the dip store.

After arsenic, cyanide was the poison most frequently encountered. Here again this can be explained by the fact that it is so ready to hand on gold mines throughout the Colony.

Other poisons found included ethyl alcohol, antimony, strychnine, nux vomica, zinc chloride (soldering fluid), salicylate, lysol, barbiturates, cantharides and various poisonous plant substances (euphorbia, wild marrow and a root).

During the year numerous samples of viscera were sent down from the Salisbury Mortuary for routine toxicological examination where the cause of death was not clearly indicated at the post-mortem.

The *Bloodstains* work showed a falling off during the year, the number of samples analysed (60) being less than half those dealt with in 1946.

Positive results were obtained in all except one case, and in several instances the actual blood group of the stains was determined.

Vital evidence was furnished in most cases, and few types of analysis call for greater scientific skill or the exercise of more meticulous care at every stage.

Exhibits in connection with *Seminal Stains* showed a 33⅓% increase over the 1946 figures. There were five "black peril" cases, all of them positive. There is no knowing the number of cases of this nature, especially those involving assaults on or interference with little European girls by Native male servants, that never get as far as the police or the analyst for investigation.

But until such time as parents realise the wicked folly of taking the smallest chances, owing to lack of proper supervision of their children, and until such time as stricter punishment of offenders is enforced, these heartbreaking cases will continue to come to our notice.

The *Miscellaneous Forensic Samples* provided, as usual, some very interesting cases. Perhaps the most important was the case of the murder of a European, in which parallel grooves and markings on the cut edges of deceased's skull were measured and compared critically, by means of wax impressions, with similar markings on pieces of chopped wood found in the wood pile. Our analysis proved beyond any doubt that the axe or other implement used to chop the wood was the weapon with which the murder was committed. This weapon was never found, but it was proved to have belonged to the suspect in the case, and our scientific evidence plus further incriminating evidence concerning human bloodstains on the suspect's shoes were strong links in the chain of purely circumstantial evidence which led eventually to his being convicted of murder in the first degree.

There were six "hit and run" accident cases, in which microscopic, chemical and physical examination of hairs, paint scrapings, fragments of skin, broken glass, etc., furnished very valuable evidence.

Other forensic cases involved examination of brain tissue for alcohol content, petrol for contamination by oil and water (sabotage), unknown substances for identification, etc., etc.

The Laboratory continues to work in close and harmonious co-operation with the Police and the Criminal Investigation Department. Hundreds of affidavits were issued during the year, and presented in evidence in Lower and Higher Courts throughout the Colony. Only rarely was any member of the staff called on to give his evidence in person, nor was there ever any serious questioning of our findings.

Waters.

The Water Samples analysed (198) showed a 50% increase over the corresponding figure for 1946.

This is certainly one of the most important branches of the work of the Laboratory. Of the samples submitted, 137, or 70%, were for private individuals or concerns, and charged for at full rates. The public is becoming increasingly aware of the valuable services which the Laboratory can and does render, and many individuals and commercial concerns have been advised regarding the best treatment to adopt with their particular water problems.

We try to keep regular check and control of the condition of Swimming Bath waters throughout the Colony, but the position still leaves much to be desired. Many more samples should be submitted for analysis and there should be more careful supervision of pumping and filtration plant.

The Railways and some of the factories have sent waters for special analysis for use in boilers, and advice re softening treatment. Other concerns have been interested in the purity of water supplies for use in the preparation of bottled mineral and table waters. A few analyses have been made of hotel

supplies in connection with the granting of liquor licences by the Liquor Licensing Board. We made a special study of the claims advanced on behalf of a particular type of small household filter, and found that they were to a very great degree substantiated.

In one of the smaller towns of the Colony the presence of very large amounts of manganese in the water was causing trouble with staining of laundry and utensils and blocking of filter beds. We recommended methods of treatment, and also, by analysing samples of water taken at various depths in the dam, were able to demonstrate that the manganese was nearly all concentrated in the bottom levels and probably originated from decaying vegetation.

A widespread outbreak of diarrhoea among natives at a mine compound was traced to the presence in the water of the mineshaft of a fair amount of arsenic, and 15 other samples of water from various sources were examined for the presence of harmful minerals.

From the point of view of hygienic analysis of waters it is often no easy matter to draw correct conclusions from a table of analytical results, and time and again it is realised that study of both the chemical and the bacteriological findings is necessary before a true verdict can be given. As soon as it is possible for a new Laboratory to be built for us, we shall have to face up to the question of the desirability of doing bacteriological analyses as well as chemical —certainly of water supplies and possibly of other commodities too.

Milk.

The number of milk samples analysed was nearly the same as for the year before.

There are still not enough samples being taken for adequate corrective control and the proportion of adulterated samples was appreciably higher in 1947 than it was in 1946.

The Dairy Regulations as they stand are quite unsatisfactory in regard to prosecution of offenders for supply of adulterated milk. Time and again the efforts and time of the sampling offieers and ourselves are wasted beeause some technical difficulty or loophole is found whereby the guilty party escapes the consequences of his action.

It is to be hoped that the new Regulations, when they are gazetted, will effectively put a stop to these evasions of justice, and that there will be powers whereby samples can be taken from hotels, boarding houses, cafes and other places supplying milk to the public. A much more vigorous programme of sampling and control is called for in the publie interest. Many more samples could with advantage be taken in the smaller towns and country districts, and perhaps when there is more chance of securing the conviction of an offender, we may hope for increased activity in the townships and smaller centres.

A number of phosphatase tests for efficiency of the pasteurisation process were carried out during the year, but these ceased when the Municipal Chemist received his equipment for the test and took over the work.

Other samples of *dairy produce* analysed numbered 40, and consisted of butter, ice-cream and eheese. Four of the butters were found to contain too much moisture.

Customs.

The *Customs Samples* included brandy, whisky, gin, liqueurs, wines and ale for alcoholic eontent. The Customs Department depends on our analysis for assessment of the correct excise duty. Here again there is inadequate control of the sale of spirits in the Colony in that under-strength spirits are allowed into the country and can apparently be offered for sale to the public *provided the purchaser is told that they are under the regulation standard strength.* It is a moral certainly that this is seldom if ever done, and when an imported sample is found to be under 75% proof (in the case of whisky, brandy, etc.) the Police should be informed so that samples can be purchased from the retail shops for analysis. A test case of this sort might do much good. The real solution, of course, lies in altering the law to prohibit the sale of such liquor altogether.

There was a big inerease in the number of samples submitted by the Customs for analysis for purposes of eorrect tariff classifieation. These are often very interesting, but they not infrequently involve a great deal of careful analysis and make considerable demands on our time. With increased importation into the Colony of a vast number of new lines this is a feature of our work which is likely to show a big increase.

Illicit Native Liquors.

During the year we analysed 745 samples of *Illicit Native Liquor*. There seems to be no lessening of the evils of Skokiaan brewing and all that the Police are able to do under the present system is keep what check they can on it and try to prevent the menace getting out of hand.

Three out of every four samples analysed were over strength, and hundreds of affidavit reports were issued, these invariably resulting in prosecution of the vendors, and the imposition of heavy fines.

Clinical Work.

We continue to assist the Public Health Laboratories at Salisbury and Bulawayo by performing for them the more difficult chemical determinations, such as analysis of stools for split and un-split fat, the colloidal gold test on cerebro-spinal fluid, etc.

We have also examined a fairly large number of drugs and chemicals from the Medical Store, some for actual identification, some for conformity with B.P. standards, others for assay for alkaloidal content. These analyses often take up a very considerable amount of time.

A native herbalist who had prepared numerous mixtures of dried herbs, roots, leaves, etc., purporting to cure or alleviate all sorts of ailments, applied for a permit to export his products. As a result, they were sent to this Laboratory for analysis, and we found four of them to be decidedly toxic, and probably dangerous in the dosages recommended.

Maize Meal Samples.

We analysed 34 samples of maize meal in connection with the usual yearly Government Contract and made recommendations based on our findings.

Only half a dozen other samples were received during the year. Once a miller has submitted his sample in connection with the annual contract, and should he not be above such practices, he can with impunity supply adulterated meal for the rest of the year for all the check that is ever kept on him. The position regarding quality of maize meal supplies in the Colony is not satisfactory. The standards of fineness have been relaxed so that meal supplied to-day is coarse and unpalatable compared with the product the native was used to in days gone by, and in addition it is only when some specific complaint is received that a sample is taken for check analysis. These conditions have largely been brought about owing to the serious shortage of maize and also to the impossibility in many instances of effecting replacements to milling machinery, but nevertheless every effort should be made to improve the position as soon as possible.

Foodstuff Samples.

Only 26 samples of foodstuffs—other than those mentioned, such as milk and mealie meal—were analysed during the year. This aspect of the work, which should be of such very great importance, is being more and more lost sight of. Even though the Food and Drugs Act is quite obsolete, it should nevertheless be possible to sample a number of articles in common use with good effect. A large number of not-so-well-known brands of tinned foodstuffs have recently been imported and the wholesomeness of some of these might well be open to question. There appears to be no proper policy of regular sampling on the part of Health Inspectors.

Miscellaneous.

The *Miscellaneous Samples* invariably cover an interesting range, and this year they were no exception. They included samples of sludge, oil, and paint from a seized up Diesel engine; boiler scales; whitings; disinfectants; a germicide submitted in connection with a Workmen's Compensation claim; bituminous paint used to coat water pipes; effluents; a crystalline solid prepared many years ago by natives as a gunpowder ingredient and found to be over 90% potassium nitrate; linen with brown stain markings for identification, and advice re removing; methylated spirit for behaviour of denaturant; cider for critical examination; anthracite coals; deposit from an aircraft fuel filter; and many others.

The "non-routine" samples help to maintain keenness and interest and not infrequently tax the analyst's ingenuity and resourcefulness to a considerable degree.

Staff, and General.

For the first half of the year there were only three officers on the staff. A fourth chemist was advertised for, and from many applications Mr. E. V. Browett, B.Sc., A.R.I.C., of London, was chosen. Mr. Browett commenced duty in July, 1947, and has proved a very valuable and very welcome addition to the staff.

As the result of his excellent record in theoretical and applied chemistry over the past 10 or more years, Mr. N. G. Shirley, M.Sc., was successful in obtaining election as an Associate Member of the Royal Institute of Chemistry of Great Britain and Ireland, and he is to be heartily congratulated on this achievement.

The Laboratory has maintained its policy of recruiting only fully trained professional officers. Most of the work performed requires a high degree of skill and special knowledge, and reference to the outline of the work presented above will indicate that there can be few fields of employment where a chemist will get more diverse experience than he will in this Laboratory, or where he will be called upon to exercise his skill and resourcefulness to a greater degree. For that reason it is essential for us to have men with the higher professional training, men who, after a short initiation only, can feel themselves capable of undertaking responsibility for analyses and investigations covering a wide range.

The staff is as yet too small to allow of much specialisation by any one officer in any one aspect of the work; such specialisation would also create even greater difficulties as regards leave, always a matter of concern in a small professional establishment.

Our further expansion is now prevented by the bottleneck of inadequate laboratory accommodation. We are expected to maintain a high quality of output, and all the time increase its quantity, when we are limited by the impossibility of cramming further staff into this disgracefully inadequate building. In a country the size of this we could well be handling twice the number of samples that we are to-day. The volume of work is increasing in spite of everything, but the size of the staff has remained the same for several years, and we find it more and more difficult to find any opportunity for thorough perusal and study of the literature, which is so vital if one wishes to keep ahead in these times of rapidly advancing ideas. It is too easy to drift into a backwater and be left far behind by the flood of modern knowledge, if one does not strive constantly to keep up to the minute with general reading and to try out new methods at the bench.

Acknowledgments.

I wish to express my appreciation of the help and courtesy always extended to my staff and myself by the Medical Director and others at Head Office.

I desire also to record my most grateful and sincere thanks to Mr. N. G. Shirley, M.Sc., Mr. D. R. Mann, M.Sc., and Mr. E. V. Browett, B.Sc. (Lond.). Without their willing and efficient co-operation the record of work outlined above could not have been achieved. Nor would this Report be complete without acknowledgment of the sterling services rendered by Miss L. A. Southey and her band of helpers at the Typing Pool. The typing of long technical reports is not easy at any time, and when lack of accommodation precludes our having even one typist on the premises, we are more than fortunate in having Miss Southey and her competent staff to do this work for us.

W. H. KITTO, M.SC., F.R.I.C.,
Government Analyst.